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## Nursing Role in Organ Transplantation Procedures

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### Abstract:

Nurses play a critical role in the organ transplantation process, serving as essential members of the interdisciplinary transplant team. They are involved in various stages, including the assessment and preparation of both donors and recipients. This responsibility encompasses thorough pre-operative evaluations, including medical history reviews, physical assessments, and lab work to ensure optimal donor-recipient matches. Nurses also provide education and support to families throughout the transplant journey, addressing their concerns and preparing them for the emotional and psychological aspects of the procedure. Their hands-on skills ensure the surgical team is well-prepared and that all patient safety protocols are strictly followed, which is vital for the success of the transplant. Post-operative care is another crucial aspect of a nurse's role in organ transplantation. After the surgery, nurses monitor patients closely for any signs of complications, such as organ rejection or infection. They manage pain and administer medications, including immunosuppressants, which are essential for preventing organ rejection. Patient education continues in this phase, as nurses guide individuals about lifestyle changes, medication regimens, and ongoing follow-up appointments. This comprehensive support not only improves patient outcomes but also fosters a trusting relationship, contributing to holistic care. Additionally, nurses collect data for research and quality improvement initiatives, further enhancing transplantation protocols and patient care in the transplant community.

**Keywords:** Organ transplantation, Nursing role, Pre-operative assessment, Patient education, Interdisciplinary team, Post-operative care, Organ rejection, Immunosuppressants, Patient safety, Quality improvement

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### Introduction:

The field of organ transplantation has made tremendous advancements since the first successful transplant of a kidney in 1954. Each year, thousands of individuals worldwide benefit from these life-saving procedures, which represent a pinnacle of medical technology and human compassion. However, the complexities surrounding organ transplantation extend significantly beyond the surgical and technical aspects. One critical but often understated facet is the indispensable role of

nursing professionals throughout the entire transplantation process. From pre-operative assessments to post-operative care, nurses play a multifaceted role that is crucial to the success of these intricate procedures [1].

Organ transplantation typically involves a series of intricate steps, including donor identification, organ procurement, surgical transplantation, and post-operative recovery. Each step necessitates skilled nursing practice rooted in comprehensive knowledge,

empathy, and interdisciplinary collaboration. With their clinical expertise and patient-centered approach, nurses serve not only as caregivers but also as advocates, educators, and coordinators, ensuring that both donors and recipients receive the highest standard of care[2].

Moreover, the nursing role extends into various specialized areas, accommodating the diverse needs of individual patients and families. In addition to direct patient care, nurses are responsible for comprehensive patient assessments, managing complex medication regimens, providing pre- and post-operative education, and offering psychosocial support. They help patients navigate the emotional landscape associated with transplantation, addressing issues such as anxiety, fear, and the stigma that may accompany organ failure. By being present during the most vulnerable moments, nurses help mitigate the distress of both recipients and their families, fostering an environment of trust and open communication [3].

Beyond patient-centric roles, nursing also plays a critical role in multidisciplinary teams that facilitate effective organ transplantation protocols. These teams often include surgeons, transplant coordinators, social workers, and other healthcare professionals. Nurses act as vital links, ensuring that communication flows efficiently among team members while also safeguarding patient advocacy throughout the process. Their ability to observe changes in patient conditions and relay this information can have profound implications for patient outcomes. Evidence suggests that cohesive teamwork—integrated effectively by nursing professionals—has a direct impact on the success rates of transplantation procedures [4].

Additionally, the role of nurses in organ transplantation procedures encompasses the complexities of ethical and legal considerations related to organ donation. Nurses frequently serve as patient and family advocates, guiding them through the procedural and ethical implications of consent for organ donation. This requires not only a thorough understanding of the legal framework but also sensitivity to cultural, religious, and individual beliefs that impact decisions surrounding organ donation [5].

In light of the ongoing challenges associated with organ shortages, including the ethical dilemmas of procurement and allocation, nurses find themselves at

the forefront of advocacy for increased awareness and education about organ donation. They are instrumental in community outreach programs that aim to alleviate fears and misconceptions surrounding organ donation while encouraging individuals to consider becoming donors [6].

As the medical landscape evolves, particularly with the incorporation of new technologies such as telemedicine and artificial intelligence, the role of nursing in organ transplantation is anticipated to expand even further. Nurses will likely find themselves adapting to new forms of patient interaction and care delivery, which will require ongoing education and professional development to stay abreast of emerging innovations [7].

### **Pre-Transplant Assessment: Nursing Responsibilities and Protocols:**

The pre-transplant assessment process is a critical component in the management of patients awaiting an organ transplant. It serves not only as a preparatory phase for the transplant surgery but also plays a significant role in determining the overall success of the procedure and the long-term health outcomes for the recipient. As frontline caregivers, nurses assume vital responsibilities during this phase, ensuring that each patient is medically and psychologically prepared for the journey ahead.

A pre-transplant assessment is a comprehensive evaluation performed on candidates for organ transplantation. It involves a multidisciplinary approach aimed at scrutinizing various facets of the patient's health, including physiological, psychological, and social dimensions. The primary objective is to ascertain the suitability of the patient for receiving a transplant, identify any pre-existing medical conditions that may compromise transplant success, and prepare the patient both physically and mentally for the upcoming procedure [8].

### **Nursing Responsibilities in Pre-Transplant Assessment**

Nurses play a pivotal role in the pre-transplant assessment process, acting as advocates, educators, and coordinators of care for transplant candidates. Their responsibilities can be broken down into several key areas:

1. **Patient Evaluation and Monitoring:** Nurses are responsible for conducting thorough health assessments, documenting pre-existing medical conditions, and monitoring vital signs. They collect comprehensive medical histories, including previous surgeries, current medications, allergies, and family medical history. These details are crucial in formulating potential risks associated with the transplant surgery and in planning for post-operative care[9].
2. **Coordination of Diagnostic Tests:** The pre-transplant phase typically requires a series of diagnostic tests to evaluate organ function and assess overall health. Nurses are tasked with arranging, performing, and interpreting results from laboratory tests such as blood work, imaging studies (like CT scans and X-rays), and other specific assessments like echocardiograms for heart transplant candidates. It is essential that they thoroughly understand these tests, their implications for the patient's health, and the significance of the results for the transplant evaluation process [9].
3. **Psychosocial Assessment:** Beyond the physical evaluation, a significant aspect of the pre-transplant assessment is addressing the psychological readiness of the patient. Nurses are responsible for conducting initial psychosocial evaluations to gauge mental health, support systems, coping mechanisms, and socioeconomic factors that could influence recovery. They may implement standardized screening tools, such as questionnaires for anxiety and depression, ensuring that psychological health is considered in the transplant eligibility assessment [9].
4. **Patient Education and Support:** Education is a core responsibility of nurses within the pre-transplant framework. Patients must be well-informed about the transplant process, including the implications of surgery, potential complications, and the importance of postoperative care and adherence to medications. Nurses provide step-by-step guidance, using approachable language and visual aids, to empower patients and their families. Supporting the emotional well-being of patients also falls within the nursing domain, as organ transplantation can be a daunting experience that evokes fear and anxiety [10].
5. **Collaboration with the Transplant Team:** The pre-transplant process often involves collaboration with

several healthcare professionals, including transplant surgeons, physicians, social workers, dietitians, and pharmacists. Nurses serve as the linchpin in this multidisciplinary team, coordinating communications between providers and ensuring that all aspects of the patient's health are addressed. They actively participate in case conferences, presenting findings from their assessments and advocating for the necessary support and resources for the patient [10].

6. **Development of a Care Plan:** Based on comprehensive assessments, nurses contribute to developing personalized care plans that outline the patient's needs and define interventions to enhance the success of the transplant. This plan may include strategies for managing comorbidities, referrals for additional support services, and scheduling follow-up appointments to monitor the patient's health status before the transplant [11].

#### Protocols for Pre-Transplant Assessment

In addition to the responsibilities carried out by nurses, there are established protocols that guide the pre-transplant assessment process. These protocols, which are usually informed by clinical guidelines and best practices, include:

1. **Standardized Screening Tools:** Healthcare organizations often utilize standardized screening and evaluation processes to ensure uniformity in assessing the eligibility of transplant candidates. This may encompass checklists to confirm comprehensive health evaluations and documentation that captures all relevant patient information [12].
2. **Comprehensive Risk Assessment:** Protocols dictate that a thorough risk assessment be conducted prior to listing for transplant, ensuring risks associated with the transplant procedure are well-understood. This involves evaluating cardiac, pulmonary, renal, and hepatic function, as well as assessing cancer history and infection risks.
3. **Ethical and Legal Considerations:** Ethical protocols require that transplant teams consider factors such as informed consent, organ allocation fairness, and potential conflicts of interest during the assessment process. Nurses must ensure that patients understand

their rights and responsibilities in the context of organ transplantation.

4. **Interdisciplinary Communication Protocols:** Efficient communication pathways between various members of the healthcare team are established to enhance coordination of care and information sharing. Regular meetings and consultations ensure that all team members are updated on the patient's status and the pre-transplant assessment's progress.
5. **Documentation Standards:** Maintaining comprehensive and accurate records is essential for continuity of care and quality assurance. Protocols dictate specific documentation styles, ensuring that all findings are recorded meticulously, which facilitates ongoing assessments and post-operative evaluations [13].

#### **Patient Education and Counseling in Transplantation:**

The journey through illness, recovery, and ultimately, the need for organ transplantation is both complex and fraught with emotional and physical challenges. Education and guidance for patients navigating these processes are essential in improving outcomes, ensuring informed decisions, and providing support during such critical moments [14].

Organ transplantation is a medical procedure that involves surgically transferring an organ from a donor to a recipient whose organ has failed or is not functioning adequately. The organs that are commonly transplanted include the heart, kidneys, liver, lungs, pancreas, and intestines. The urgency of organ transplants often stems from the severity of the patient's condition, which necessitates that comprehensive education is provided to ensure they understand the processes involved.

For patients facing organ donation, the preparatory education is multifaceted. It covers critical aspects such as eligibility for transplantation, the evaluation process, what to expect during surgery, recovery processes, potential complications, and the importance of post-transplant care. Ideally, this education should begin as early as possible in the patient's healthcare journey to allow them ample time to assimilate information and ask pertinent questions [15].

#### **The Role of Education in Patient Outcomes**

Research has demonstrated that patients who are well-informed about their medical conditions and treatment options experience better health outcomes. In the context of organ transplantation, education enhances patients' comprehension of their situations, improves adherence to medical regimens, and often leads to more successful transplants [16].

1. **Understanding Eligibility and the Waiting List:** One of the first topics of education should revolve around the criteria for becoming an organ transplant candidate. Patients often require clarity regarding their eligibility and the factors influencing their jump on the waiting list. This topic can significantly impact their emotional well-being, reducing anxiety and instilling hope [16].
2. **The Pre-Transplant Process:** The pre-transplant phase involves several evaluations, including psychological assessments, blood tests, and imaging studies. Educating patients about these steps — and the importance of each — can help demystify the procedure and encourage compliance.
3. **Post-Transplant Care:** Education must also focus on the post-operative phase. After a transplant, patients will often require immunosuppressive therapy to prevent organ rejection. Education regarding the importance of adhering to medication regimens, recognizing signs of rejection, and making lifestyle modifications is vital for successful recovery.
4. **Mental Health Considerations:** The psychological impact of undergoing transplantation cannot be underestimated. Patients often experience anxiety, depression, and uncertainty about their future. Support programs, counseling, peer support groups, and patient education can significantly serve to alleviate these feelings and offer coping strategies [17].

#### **Guiding Patients in Nursing Homes**

Many patients, particularly the elderly, may find themselves in nursing homes either pre- or post-transplantation. The role of nursing homes in patient education and support is paramount. Here, trained staff and caregivers can provide both medical and emotional support, guiding patients through their journey [18].

1. **Individualized Care Plans:** Every resident has unique needs and health conditions that must be addressed thoughtfully. By crafting individualized care plans,

nursing homes can provide tailored education regarding medication management, mobility exercises, dietary needs, and emotional health strategies. This approach ensures that residents remain informed and feel empowered in their recovery [19].

2. **Communication with Healthcare Providers:** Nursing home staff should be trained to facilitate communication between patients and their healthcare providers. Clear and open lines of communication ensure that patients can ask questions, voice concerns, and fully understand their health conditions and treatments.
3. **Support Groups and Community Programs:** Nursing homes can play a pivotal role in connecting patients with local support groups that may focus on organ transplantation, chronic illness management, or overall health and wellness. Community involvement can provide a sense of belonging and support that is often crucial to mental health and recovery.
4. **Family Involvement in Education:** An essential aspect of guidance is involving family members in the education process. Families play a critical role in supporting patients throughout the transplantation process, and educating them on the patient's needs, treatment plans, and lifestyle changes is vital. This helps in building a support network that fosters a conducive environment for recovery [19].

#### **Leveraging Technology for Patient Education**

In recent years, technology has emerged as a powerful tool for enhancing patient education. Digital platforms, mobile applications, and telehealth services provide access to relevant information at patients' fingertips. Patients and families can access educational resources regarding transplantation, care routines, and wellness strategies. Virtual support groups allow individuals facing similar situations to connect, share experiences, and offer one another encouragement.

Educational videos can serve to explain intricate processes visually, catering to different learning preferences. By using technology to provide knowledge on organ transplantation and nursing home care, healthcare professionals can empower patients to make informed choices that positively impact their quality of life [20].

#### **Nursing Care During the Transplant Surgical Procedure:**

Organ transplantation is a complex medical procedure that involves the removal of a healthy organ from a donor and its placement into a recipient whose organ has failed or is damaged beyond repair. The success of transplantation is highly dependent on meticulous surgery, but it is equally reliant on the comprehensive care provided by the nursing team throughout the surgical process. Nursing care during the transplant surgical procedure is multifaceted, encompassing preoperative preparation, intraoperative support, and postoperative management.

The preoperative phase is crucial in preparing the patient physically and psychologically for a transplant surgery. Nurses play a key role in educating the patient about the procedure, including what to expect before, during, and after surgery. This education can alleviate anxiety and promote understanding, which is essential for informed consent. Nurses must ensure that the patient is aware of potential risks, complications, and the importance of adhering to pre-surgery protocols, such as fasting and medication adjustments [21].

In addition to education, assessing the patient's physical condition is a primary nursing responsibility. This involves obtaining detailed medical history, performing physical assessments, and reviewing laboratory results. Nurses must identify any existing comorbidities that could complicate the surgery or influence recovery. Vital signs monitoring and establishing an intravenous access point for medication administration are also essential nursing tasks during this stage [21].

Moreover, nurses collaborate with the broader healthcare team, including surgeons, anesthesiologists, and transplant coordinators. Effective communication is key to ensuring that all team members are informed about the patient's condition and any issues that arise. The establishment of a supportive environment can help alleviate anxiety, making it essential for nurses to provide emotional support to patients and their families throughout this process.

During the surgical procedure itself, nurses are integral members of the surgical team, assuming roles that are critical to ensuring patient safety and a successful outcome. Intraoperative nursing responsibilities vary

depending on the nurse's specific role, whether they are circulating, scrubbing, or serving as a first assistant [22].

The circulating nurse plays a vital role in maintaining an environment conducive to successful surgery. This includes managing surgical supplies, ensuring that instruments are properly sterilized and available, and keeping the operating room organized. They also serve as the patient's advocate, monitoring vital signs and communicating any concerns to the surgical team. Constant vigilance is critical, as even minor changes in a patient's condition can rapidly escalate into serious complications [22].

The scrub nurse, on the other hand, is responsible for maintaining aseptic technique and assisting the surgeons by passing instruments and anticipating their needs. This requires a detailed understanding of the surgical procedure and dexterity in handling surgical tools. Their role is physically demanding and necessitates a high level of concentration and teamwork [23].

An essential aspect of intraoperative care is the management of anesthesia. The anesthesia nurse or anesthesiologist oversees the administration of anesthesia and monitors the patient's response throughout the procedure. This includes constant assessment of vital signs such as heart rate, blood pressure, oxygen saturation, and respiratory patterns. Any deviations from normal ranges must be addressed immediately to prevent complications [23].

The intraoperative phase also requires quick access to emergency protocols. Nurses must be prepared to respond to potential complications, such as hemorrhage, organ rejection, or adverse reactions to anesthesia. Their ability to remain calm and act swiftly during critical moments is essential for the patient's safety [23].

The postoperative phase is equally critical, as patients are at increased risk for complications following surgery. Nursing care in this phase focuses on monitoring the patient's recovery, managing pain, preventing infection, and facilitating rehabilitation. Upon transfer to the postoperative unit, the nursing team conducts comprehensive assessments to evaluate the patient's neurological status, cardiovascular system, respiratory function, and fluid balance.

Pain management is one of the primary nursing responsibilities post-surgery, as effective pain relief is essential for recovery and mobility. Nurses employ various pain management strategies, including medications, non-pharmacological interventions, and patient education on pain control options. Regular reassessment of pain levels allows the nursing team to make necessary adjustments to the pain management plan [24].

Preventing infection is another critical focus, particularly in transplant patients, who are often on immunosuppressive medications. Nurses implement strict infection control protocols, including surgical site care, monitoring for signs of infection, and educating patients and families on the importance of hygiene and early reporting of any symptoms of infection.

Moreover, nurses are tasked with educating patients on the importance of medication adherence, particularly concerning immunosuppressants. Understanding the medication regimen can significantly impact the success of the transplant and prevent complications such as organ rejection [24].

### **Postoperative Monitoring and Management of Transplant Patients:**

The advancements in organ transplantation have significantly improved the quality of life for patients with end-stage organ failure. As a result, a growing number of individuals are living longer after receiving transplants. While the acute phase of postoperative care for such patients is usually conducted in specialized transplant centers, a significant proportion of these individuals eventually transition to nursing homes for comprehensive rehabilitation and recovery. This transition poses unique challenges and responsibilities for healthcare professionals, particularly nurses, who are charged with monitoring and managing the health of these patients. The importance of effective postoperative monitoring and management of organ transplant patients cannot be overstated; it is critical to ensuring their long-term success and well-being [25].

Organ transplantation involves the surgical removal of an organ from a donor and its implantation into a recipient. Commonly transplanted organs include kidneys, livers, hearts, and lungs. Post-transplant care is complex, as patients require ongoing medical

management to prevent complications such as organ rejection and infection. Immunosuppressive medication regimens are essential for preventing the recipient's immune system from attacking the new organ. However, these medications also increase the risk of infections and other health issues. Therefore, postoperative monitoring plays a crucial role in assessing the patient's response to the transplant, identifying any complications early, and adjusting treatment protocols as needed [26].

The transition of organ transplant patients from acute care settings to nursing homes is often necessitated by the need for extended rehabilitation and assistance with activities of daily living. Nursing homes can provide vital support in a familiar and less intensive environment, which is beneficial for patients who may require ongoing medical interventions, therapies, and nursing care. However, because nursing homes typically cater to a diverse population with varying levels of health needs, specialized training and protocols are required enabling facility staff to provide optimal care for transplant patients [26].

#### **Key Components of Postoperative Monitoring**

1. **Vital Signs Monitoring:** Vital signs, including temperature, blood pressure, heart rate, and respiratory rate, should be monitored closely. Abnormal findings may provide early indications of infection or other complications. Post-transplant patients are particularly susceptible to infections due to their immunosuppressive therapy [27].
2. **Laboratory Assessments:** Regular laboratory tests are critical in evaluating organ function and detecting abnormalities. For example, kidney transplant patients typically require frequent assessments of serum creatinine levels to gauge kidney function. Liver transplant recipients need regular liver function tests to monitor bilirubin and enzyme levels. Based on these results, necessary adjustments to medication dosages or treatment plans can be made promptly [27].
3. **Medication Management:** Organ transplant patients must adhere strictly to their immunosuppressive medication regimens. Medication reconciliation is essential during their stay in nursing homes. Nurses must monitor for potential drug interactions and assess the patient's adherence to medication schedules. Educating patients about the importance of continued medication

adherence and the potential consequences of non-adherence is a key aspect of care [28].

4. **Signs of Rejection:** Symptoms of organ rejection can vary depending on the type of transplant but often include fever, fatigue, swelling, and changes in organ function. Staff should be vigilant in assessing patients for signs and symptoms of rejection and facilitating timely communication with the transplant team.
5. **Infection Control:** Given the increased susceptibility to infections, stringent infection control protocols must be in place. This includes practicing good hygiene, ensuring proper wound care, and encouraging vaccinations as recommended. Employees in nursing home settings should be well-versed in recognizing early signs of infection so that prompt interventions can be initiated [29].

#### **Psychological and Social Support**

Organ transplant surgery often imposes a significant emotional and psychological burden on patients. Care teams should be prepared to address these needs by providing psychological support, counseling, and social work assistance. Active participation in support groups and fostering social engagement can enhance patients' quality of life and expedite their recovery. Family education and involvement are equally important; they can help reinforce the care plans developed by healthcare professionals and provide ongoing emotional support to the transplant recipient [30].

Education is an essential component of postoperative management for organ transplant patients. Nurses should provide comprehensive education to patients and their families regarding the importance of medication adherence, dietary restrictions, and signs and symptoms of potential complications. Providing clear, easy-to-understand materials can empower patients and families, promoting proactive health management following the transplant.

In nursing homes, continuous communication and collaboration with the transplant center are pivotal. Regular updates on the patient's progress, laboratory results, and any complications should be documented and shared with the transplant team to ensure continuity of care. Establishing a protocol for timely consultations

with transplant specialists in the event of complications can significantly enhance patient outcomes [30].

#### **Long-Term Follow-Up Care and Patient Support:**

Organ transplantation represents a significant medical advancement that has transformed the lives of countless individuals suffering from organ failure. However, the journey does not conclude upon emerging from the operating room. Long-term follow-up care and support for organ transplant patients are crucial components that determine the overall success of the transplant and the long-term health of the recipient [31].

Once an individual undergoes an organ transplant, they enter a unique phase of recovery that necessitates ongoing medical supervision. Comprehensive post-transplant care is essential for several reasons. First and foremost, transplant patients are at a lifelong risk for organ rejection. Their immune systems are suppressed through immunosuppressive medications to prevent the body from rejecting the new organ, making these patients more vulnerable to infections and various other health complications. This necessitates regular monitoring of organ function and medication levels, often through blood tests and medical imaging [32].

Furthermore, organ transplant recipients may face chronic health issues associated with the transplant process itself. Long-term use of immunosuppressants can lead to complications such as hypertension, diabetes, and increased risk of certain cancers. Consequently, patients need management strategies that encompass pharmacological interventions as well as lifestyle modifications to mitigate these risks [32].

Another aspect of the need for comprehensive care is psychological well-being. The experience of undergoing transplantation can be psychologically taxing, leading to anxiety, depression, or stress disorders. Continuous follow-up that includes mental health support and counseling services is essential in addressing these psychological aspects and ensuring overall well-being.

The road to recovery post-organ transplant is fraught with challenges. Each patient's journey is unique, based on individual circumstances, previous health conditions, and the type of organ transplanted. One of the predominant issues faced by transplant recipients is the adherence to complex medication regimens. The

immunosuppressive therapy often includes multiple medications taken at various times throughout the day, which can be overwhelming and lead to non-adherence. Non-adherence not only increases the risk of organ rejection but can also lead to adverse health outcomes that complicate recovery [33].

Another challenge is the potential for post-transplant complications. Organ rejection, which can occur acutely or chronically, often requires prompt attention and repeated interventions. Beyond rejection, transplant patients must also navigate the potential for infections, especially during the early post-operative period when the immune system is most vulnerable. Furthermore, as lauded as organ transplants may be, these surgeries often require lifelong health insurance and financial support systems, which can be challenging to obtain and maintain [33].

Moreover, the sociocultural aspects must be taken into consideration. The emotional scars of waiting for a transplant can linger, and many patients grapple with survivor's guilt or feelings of inadequacy, especially in cases where donor organs were procured from deceased donors. Thus, there is a pressing need for well-rounded support frameworks, including family-oriented programs and patient networks to help mitigate the isolation that often accompanies recovery.

The multi-faceted approach to long-term follow-up involves a collaboration among various healthcare professionals. This interdisciplinary team usually includes transplant surgeons, nephrologists or hepatologists (depending on the organ), nurses, dietitians, social workers, and mental health professionals. Each member plays a vital role in the comprehensive care plan that fosters long-term success [34].

Regular follow-up visits are imperative for monitoring organ function, medication management, and patient education. Typically, these visits may involve clinical assessments, blood tests, immunologic monitoring, and evaluations to identify any signs of complications. For kidney transplant patients, routine lab tests to check serum creatinine levels and electrolyte balances are common, while liver transplant patients may undergo abdominal ultrasound examinations and liver function tests [35].



Patient education emerges as a cornerstone of post-transplant care. Transplant recipients should be educated about their specific condition, the importance of adhering to medication regimens, signs and symptoms of potential complications, and lifestyle modifications that can foster a healthier life. This educational component may also include guidance on nutrition and exercise, emphasizing a balanced diet and regular physical activity that accommodates the patient's condition.

Moreover, support systems such as peer support groups or survivor networks can be particularly helpful in providing emotional aid. These resources allow patients to share their experiences, challenges, and triumphs, fostering a sense of community that can be indispensable to mental health [36].

Education and support systems are paramount for the psychosocial well-being of transplant patients. In addition to clinical follow-up, education can help patients develop coping strategies for the adjustments required post-transplant. Workshops, informational resources, and peer mentorship programs can be significant contributors to patient education efforts [37].

Support systems also play a critical role in encouraging patients to seek help when facing difficulties related to health management. For those struggling with mental health issues, connecting with mental health professionals who specialize in transplant patients can be transformative. These professionals can assist patients in navigating the grief of loss (for those who received organs from deceased donors), guilt, or anxiety about returning to everyday life.

Finally, the role of family and caregivers cannot be underestimated. Family members are often integral to the postoperative care regimen, reminding patients about medications and attending medical appointments. Support groups or educational programs for caregivers can also enhance the network of support surrounding transplant patients, ensuring a holistic approach to recovery [38].

#### **Ethical and Legal Considerations in Organ Transplantation Nursing:**

Organ transplantation is a remarkable medical advancement that has provided a new lease on life for countless individuals suffering from organ failure.

However, this complex procedure extends far beyond the physical act of surgery; it resides at the intersection of medicine, ethics, and law. The role of nursing in organ transplantation is crucial, as nurses serve as a primary interface between patients, families, and the healthcare system. With such a pivotal position comes significant responsibilities that include navigating a myriad of ethical and legal considerations [39].

Nurses in the field of organ transplantation engage in various roles: they provide direct patient care, educate patients and families about the transplant process, coordinate care, and participate in research. Beyond their clinical duties, transplantation nurses are also instrumental in addressing ethical dilemmas and upholding legal standards pertinent to organ transplantation.

One of the primary ethical responsibilities of nursing is patient advocacy, which encompasses promoting and protecting the rights and welfare of patients. In the context of organ transplantation, this involves ensuring that patients comprehend the complexities of the transplant process, including the associated risks and benefits. Achieving informed consent is a critical component of this responsibility; patients must not only be provided with information but also be in a position to make decisions free from coercion [40].

In many instances, patients may find the prospect of organ transplantation overwhelming. Nurses must take the time to provide a clear and thorough explanation of medical terminologies, treatment options, and the implications of both choosing and refusing transplantation. This educational component is vital, as many patients may arrive at the transplant center with misconceptions about the process. Failure to obtain genuine informed consent can lead to ethical violations and legal repercussions, including allegations of malpractice [40].

One of the most contentious ethical issues in organ transplantation arises from the allocation of donor organs. The demand for transplantable organs far exceeds the available supply, forcing healthcare systems to implement criteria for organ allocation. These criteria consider a multitude of factors, including medical urgency, compatibility, and the potential for post-transplant success. As frontline providers, nurses must

recognize their role in endorsing fair and just practices for organ allocation [41].

Transplantation nurses may encounter situations where patients or their families express feelings of entitlement or frustration regarding the allocation of organs. It is an ethical obligation for nurses to convey the rationale behind allocation policies and to advocate for equitable treatment for all patients, regardless of socioeconomic status, race, or cultural background. Moreover, nurses are encouraged to engage in ethical discussions with interdisciplinary teams to foster a comprehensive understanding of these policies, contributing to a culture of ethical practice and egalitarianism [42].

In nursing, cultural competence is essential, especially in organ transplantation, where ethical views on organ donation can significantly differ among individuals and communities. Some cultures may view organ donation as a noble act, while others may oppose it for religious or personal reasons. Nurses must remain respectful and sensitive to these diverse viewpoints while advocating for the benefits of organ transplantation.

Navigating these ethical considerations requires nurses to engage in open dialogues with patients and families about their cultural beliefs and values. It is imperative to facilitate discussions about organ donation in an inclusive manner. Failure to acknowledge these differences can lead to mistrust and may discourage individuals from seeking necessary medical interventions. Additionally, nurses can act as vital links in bridging communication between patients and multidisciplinary teams to better ensure culturally relevant care [43].

The ethical considerations surrounding organ transplantation extend into post-operative care as well. Transplantation nurses must monitor patients closely for potential complications and ensure adherence to immunosuppressive therapy to minimize the risk of organ rejection. It is also essential for nurses to provide education about lifestyle modifications needed after transplantation to enhance health outcomes [43].

However, ethical dilemmas may arise if patients refuse necessary postoperative treatments or lifestyle changes. In such scenarios, nurses face the dual challenge of respecting patient autonomy while also advocating for the best health outcomes. This delicate balance requires

nurses to employ strong communication skills and compassion, serving both as healthcare advocates and educators. Ethical decision-making models can help nurses navigate these scenarios, allowing them to address conflicts between personal values, patient autonomy, and professional responsibilities [43].

In addition to ethical considerations, transplantation nurses must be aware of the legal aspects surrounding organ transplantation. Laws governing organ donation vary widely by state and country, and nurses should familiarize themselves with local and national regulations regarding the organ transplant process. This may include understanding the legal frameworks that regulate organ donation, living donors, and deceased donors.

Moreover, legal precautions must be taken when it comes to documentation and patient records. Errors in documentation can lead to significant ramifications, including legal liability. Nurses must ensure that all aspects of care, from patient evaluations to post-operative monitoring, are accurately documented, which serves not only as a legal safeguard but also enhances patient safety and continuity of care [44].

### **Advancements in Transplant Nursing Practice and Future Directions:**

Transplantation has emerged as one of the most transformative medical innovations of the modern era, offering renewed hope for patients suffering from end-stage organ failure. The role of transplant nursing within this transformative field is critical, evolving rapidly alongside advances in medical technology, pharmacology, and patient care practices.

Transplant nursing encompasses a diverse range of responsibilities involving the care of patients undergoing or recovering from organ transplantation. Transplant nurses are vital members of interdisciplinary teams that involve surgeons, physicians, pharmacists, social workers, and dietitians. Their roles may include patient education, coordination of care, medication management, and monitoring for complications. In light of the complexities associated with transplant procedures, specialized knowledge in immunology, pharmacotherapy, and post-operative care is essential for success in this field [44].

### Recent Advancements in Transplant Nursing Practice

1. **Enhanced Patient Education and Pre-Transplant Assessment:** One of the most significant advancements in transplant nursing practice has been the enhancement of patient education and pre-transplant assessment protocols. With the advent of detailed educational materials, multimedia resources, and individualized counseling sessions, transplant patients are better informed regarding their procedures, potential outcomes, and the importance of adherence to post-transplant care regimens. As a result, patients are more likely to participate actively in their own care, leading to improved outcomes. The use of telemedicine and digital health technologies has also revolutionized pre-transplant assessments, allowing for remote consultations and streamlined evaluation processes [45].
2. **Improved Care Coordination:** Transplant nurses have taken on expanded roles in care coordination, facilitating seamless communication among healthcare teams. By utilizing electronic health records and integrated care systems, nurses can track patient progress, manage appointments, and coordinate follow-up care more effectively. This coordination helps in minimizing delays and preventing complications, which is crucial in the postoperative phase of transplant care [45].
3. **Advancements in Immunosuppressive Therapies:** With ongoing research and development, immunosuppressive therapies have seen significant advancements, leading to improved graft survival rates. Transplant nurses play an essential role in the management of these therapies, monitoring for side effects, and ensuring adherence. Recent trends include the use of personalized medicine approaches to tailor immunosuppression to individual patient needs. As novel immunosuppressive agents become available, nurses must remain well-versed in the implications of these therapies, enhancing their role in patient management [46].
4. **Focus on Mental Health and Quality of Life:** Awareness of the psychological impact of transplantation has grown, acknowledging that mental health is a significant component of overall patient outcomes. Recent advancements underscore the necessity for holistic approaches to care that include

assessing patients' mental health and social support systems. Transplant nurses are increasingly being trained in recognizing and addressing issues like depression and anxiety, contributing to better management of patients' emotional well-being. Integration with mental health professionals has also become a priority, ensuring that patients receive comprehensive support throughout their transplant journey [47].

5. **Research and Evidence-Based Practice:** The role of transplant nurses in research and evidence-based practice is steadily gaining prominence. Through participation in clinical trials and contributions to research studies, they can influence care protocols and identify best practices for patient management. There is a growing body of literature emphasizing the critical role of nurses in ensuring optimal transplant outcomes, which helps to shape educational programs and improve nursing curricula [48].

### Future Directions in Transplant Nursing

As the field of transplantation continues to advance, several future directions can be anticipated in transplant nursing practice. These directions include:

1. **Emphasis on Advanced Technologies:** The integration of advanced technologies such as artificial intelligence (AI), predictive analytics, and machine learning will likely impact transplant nursing significantly. Nurses may utilize AI-driven tools to monitor patient data in real time, predict complications, and tailor interventions. As telehealth becomes more prevalent, transplant nurses may expand their roles in virtual care delivery models, enabling them to reach patients in remote areas and providing continuity of care post-transplant [49].
2. **Interprofessional Collaboration:** Future advancements will likely emphasize the importance of interprofessional collaboration in the transplant setting. By working collectively with diverse healthcare professionals, transplant nurses will play a critical role in developing patient-centered care plans, ensuring comprehensive care across different domains of health. This integration could further facilitate communication and teamwork, improving both patient experiences and outcomes [50].
3. **Culturally Competent Care:** Given the diversity in patient populations seeking organ transplants, the future

of transplant nursing will necessitate a focus on culturally competent care. Addressing the cultural, social, and economic factors that affect patient behavior and treatment adherence is crucial. As the need for personalized approaches increases, transplant nurses will need to develop cultural competency training that allows them to understand and respect the values and beliefs of individuals from various backgrounds [51].

4. **Advocacy for Organ Donation:** Transplant nurses will likely become more involved in advocacy efforts aimed at increasing organ donation and public awareness. Their firsthand experiences with organ transplant patients equip them uniquely to educate communities about the importance of organ donation and to navigate conversations around end-of-life care and substitute decision-making [52].
5. **An Expanded Role in Patient Outcomes Research:** Future research initiatives may better harness the expertise of transplant nurses in outcomes analysis. By examining the long-term effects of care strategies and nursing interventions on patient health, transplant nurses could participate actively in shaping evidence-based guidelines that influence future transplant practices [53].

#### Conclusion:

In conclusion, the nursing role in organ transplantation procedures is multifaceted and integral to the overall success of the transplant process. Nurses are not only essential in the pre-operative assessment and education of patients and families but also play a critical part in intraoperative care and postoperative management. Their expertise in monitoring for complications, administering medications, and providing ongoing support significantly impacts patient outcomes and quality of life post-transplant. Furthermore, as the field of organ transplantation continues to evolve with new technologies and practices, nurses must remain informed and adaptable, ensuring they provide the best possible care. By fostering strong interdisciplinary collaboration and focusing on patient-centered care, nurses are pivotal in advancing the standards of organ transplantation, ultimately improving the longevity and effectiveness of transplants for those in need.

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