

**NURSING, HEALTH SCIENCES AND ALLIED HEALTH**  
**CORE CURRICULUM**  
**September, 2013**

**Section 1: The Role of the Transplant Nurse Coordinator: History and Current Practice**

1. History of Transplant Coordinator role development.
2. Role on the transplant team.
3. Challenges and limitations of the role.
4. Global differences in the role.

**References:**

- Filipponi F, De Simone P, Mosca F. (2008) Appraisal of the coordinator-based transplant organizational model. *Transplant Proceedings, 37, 2421-2.*
- Lopez-Navidad A. Domingo P. Viedma MA. (1997) Professional characteristics of the transplant coordinator. *Transplant Proceedings, 29, 1607-13.*
- Matesanz R., Miranda B. (1995) Profile of the Spanish transplant coordinator. *Transplant Proceedings, 27, 2389-90.*
- McNatt GE. (2008) Nursing and transplant coordination: a call for clarity

**Section 2: Evaluation and Management of the Transplant Candidate**

1. Referral and Indications/Contraindications for Heart and Lung Transplantation
  - a. Referral methods and timing.
  - b. Contraindications for heart or lung transplant (reject for evaluation).
  
2. Evaluation and management: heart transplant candidate
  - a. Elements of evaluation
    - i. Tests
    - ii. Imaging
    - iii. Nursing role
  - b. Decision-making
  
3. Evaluation and management: lung transplant candidate
  - a. Elements of evaluation
    - i. Tests
    - ii. Imaging
    - iii. Nursing role
  - b. Decision-making

4. Patient and family education
  - a. Topics discussed
  - b. Documentation
  - c. Evaluation of learning
  
5. Psychosocial issues pre-transplant
  - a. Substance abuse
  - b. Support systems
  - c. Postop management
  - d. Financial assessment

**References:**

- Banner, N. R., Bonser, R. S., Clark, A. L., Clark, S., Cowburn, P. J., Gardner, R. S., . . . Williams, S. G. (2011). UK guidelines for referral and assessment of adults for heart transplantation. *Heart, 97*(18), 1520-1527.
- Canter, C. E., Shaddy, R. E., Bernstein, D., Hsu, D. T., Chrisant, M. R., Kirklin, J. K., . . . Quality of Care and Outcomes Research Interdisciplinary Working Group. (2007). Indications for heart transplantation in pediatric heart disease: A scientific statement from the American Heart Association Council on Cardiovascular Disease in the Young; the Councils on Clinical Cardiology, Cardiovascular Nursing, and Cardiovascular Surgery and Anesthesia; and the Quality of Care and Outcomes Research Interdisciplinary Working Group. *Circulation, 115*(5), 658-676.
- Kreider, M., & Kotloff, R. M. (2009). Selection of candidates for lung transplantation. *Proceedings of the American Thoracic Society, 6*(1), 20-27.
- Lynch, J. P., 3rd, Saggar, R., Weigt, S. S., Ross, D. J., & Belperio, J. A. (2006). Overview of lung transplantation and criteria for selection of candidates. *Seminars in Respiratory & Critical Care Medicine, 27*(5), 441-469.
- Mehra, M. R., Jessup, M., Gronda, E., & Costanzo, M. R. (2006). Rationale and process: International Society for Heart and Lung Transplantation guidelines for the care of cardiac transplant candidates--2006. *Journal of Heart & Lung Transplantation, 25*(9), 1001-1002.
- Mehra, M. R., Kobashigawa, J., Starling, R., Russell, S., Uber, P. A., Parameshwar, J., . . . Barr, M. (2006). Listing criteria for heart transplantation: International Society for Heart and Lung Transplantation guidelines for the care of cardiac transplant candidates--2006. *Journal of Heart & Lung Transplantation, 25*(9), 1024-1042.
- Orens, J. B. (2007). Lung transplantation for pulmonary hypertension. *International Journal of Clinical Practice, Supplement*(158), 4-9.
- Orens, J. B., Estenne, M., Arcasoy, S., Conte, J. V., Corris, P., Egan, J. J., . . . Pulmonary Scientific Council of the International Society for Heart and Lung Transplantation. (2006). International guidelines for the selection of lung transplant candidates: 2006 update--a

consensus report from the pulmonary scientific council of the international society for heart and lung transplantation. *Journal of Heart & Lung Transplantation*, 25(7), 745-755.  
Shah, P. D., & Orens, J. B. (2012). Guidelines for the selection of lung-transplant candidates. *Current Opinion in Organ Transplantation*, 17(5), 467-473.

### **Section 3: Caring for the listed patient**

1. Collaboration between Heart Transplant and MCS Coordinators c Patients on MCS Devices
  - Understanding transplant patient selection criteria
  - Communication
  - Advocacy
  - Palliative care
2. Difficult decisions during the waiting period
  - Setting and managing expectations of the transplant process
  - Psychosocial support of patients and families
  - Addressing conflict within the transplant team
3. Managing patients with anti HLA antibodies and desensitization therapies
  - Risk factors for development of anti -HLA Ab
  - Mechanism of action of desensitization strategies
  - Monitoring of anti-HLA Ab pre transplant
  - Assessing for donor-specific Ab post transplant
4. The Heart and Lung Donor
  - Multiple priorities of the procurement transplant coordinator
  - Determining suitability of thoracic organs for transplantation
  - Factors that determine donor-recipient matching
  - How assessment and coordination of SCD and DCD donors differ
5. Interactive Session
  - Exemplars:
    - Donor is CDC high risk, how does your selection and care of recipient differ from SCD
    - Listed heart txp candidate c MCS discloses to MCS coordinator ambivalence about txp

## Recommended reading

### Collaboration between Heart Transplant and MCS Coordinators c Patients on MCS Devices

Buda, T.M., Kendall, K. Nursing and psychosocial issues of patients on mechanical support

(2001) *Journal of Cardiac Surgery*, 16 (3), pp. 209-221.

Helman, D.N., Oz, M.C. Developing a comprehensive mechanical support program

(2001) *Journal of Cardiac Surgery*, 16 (3), pp. 203-208

Kinkhabwala, M. P., & Mancini, D. (2013). Patient selection for cardiac transplant in 2012.

*Expert Review of Cardiovascular Therapy*, 11(2), 179-191.

Lingard, L.<sup>a b</sup>, Mcdougall, A.<sup>a c</sup>, Levstik, M.<sup>d</sup>, Chandok, N.<sup>d</sup>, Spafford, M.M.<sup>e</sup>, Schryer, C.<sup>f</sup>

Representing complexity well: A story about teamwork, with implications for how we teach collaboration (2012) *Medical Education*, 46 (9), pp. 869-877.

Mehra, M. R., Kobashigawa, J., Starling, R., Russell, S., Uber, P. A., Parameshwar, J., . . . Barr, M.

(2006). Listing criteria for heart transplantation: International society for heart and lung transplantation guidelines for the care of cardiac transplant candidates-2006. *Journal of Heart and Lung Transplantation*, 25(9), 1024-1042.

## Difficult decisions during the waiting period

Bryant, S. B., & Reams, C. (1998). How to assess a patient's support system and personal abilities prior to liver transplantation. *Hepato-Gastroenterology*, 45(23), 1395-1397.

Byram, E. K. (2012). Upstream palliative care for the patient with a left ventricular assist device as destination therapy. *Dimensions of Critical Care Nursing*, 31(1), 18-24.

Charpentier, K. P., & Mavanur, A. (2008). Removing patients from the liver transplant wait list: A survey of US liver transplant programs. *Liver Transplantation*, 14(3), 303-307.

Colman, R. E., Curtis, J. R., Nelson, J. E., Efferen, L., Hadjiliadis, D., Levine, D. J., . . . Singer, L. G. (2013). Barriers to optimal palliative care of lung transplant candidates. *Chest*, 143(3), 736-743.

Evon, D. M., Burker, E. J., Sedway, J. A., Cicale, R., Davis, K., & Egan, T. (2005). Tobacco and alcohol use in lung transplant candidates and recipients. *Clinical Transplantation*, 19(2), 207-214.

Lefaiver, C. A., Keough, V. A., Letizia, M., & Lanuza, D. M. (2009). Quality of life in caregivers providing care for lung transplant candidates. *Progress in Transplantation*, 19(2), 142-152.

Lewis, E. F. (2011). End of life care in advanced heart failure. *Current Treatment Options in Cardiovascular Medicine*, 13(1), 79-89.

Mullan, B., Snyder, M., Lindgren, B., Finkelstein, S. M., & Hertz, M. I. (2003). Home monitoring for lung transplant candidates. *Progress in Transplantation*, 13(3), 176-182.

Neil, J. A., & Corley, M. C. (2000). Hostility toward caregivers as a selection criterion for transplantation. *Progress in Transplantation*, 10(3), 177-181.

- Ohler, L. (1998). In sickness and in health: Testing the vow after transplantation. *Journal of Transplant Coordination*, 8(4), 198.
- Paris, W., Cooper, D. K. C., Samara, S., Carpenter, W., Crockett, S., Calhoun-Wilson, G., . . . Zuhdi, N. (1995). A comparison of organ transplant patient and professional staff attitudes. *International Journal of Rehabilitation and Health*, 1(3), 167-178.
- Russell, C. L. (2005). Medication noncompliance: Perceptions of transplant healthcare providers. *Dialysis and Transplantation*, 34(5), 301-313+346.
- Russell, C. L., & Freiburghaus, M. (2003). Heart transplant patient teaching documentation. *Clinical Nurse Specialist CNS*, 17(5), 249-257; quiz 258.
- Trask, P. C., Paterson, A., Riba, M., Brines, B., Griffith, K., Parker, P., . . . Ferrara, J. (2002). Assessment of psychological distress in prospective bone marrow transplant patients. *Bone Marrow Transplantation*, 29(11), 917-925.

### **Managing patients with anti HLA antibodies and desensitization therapies**

- Anand, J., & R. Mallidi, H. (2013). The state of the art in heart transplantation. *Seminars in Thoracic and Cardiovascular Surgery*, 25(1), 64-69.
- Asante-Korang, A., Jacobs, J. P., Ringewald, J., Carapellucci, J., Rosenberg, K., McKenna, D., . . . Sleasman, J. (2011). Management of children undergoing cardiac transplantation with high panel reactive antibodies. *Cardiology in the Young*, 21(SUPPL. 2), 124-132.
- Crew, R. J., & Ratner, L. E. (2007). Transplanting the sensitized patient. *Current Opinion in Organ Transplantation*, 12(4), 415-419.
- Jordan, S. C., Vo, A., Lai, C. -, & Reinsmoen, N. (2013). Defining the benefits of desensitization therapy. *Transplantation*, 95(6), e31-e32.
- Kinkhabwala, M. P., & Mancini, D. (2013). Patient selection for cardiac transplant in 2012. *Expert Review of Cardiovascular Therapy*, 11(2), 179-191
- Lobashevsky, A. L., Higgins, N. G., Rosner, K. M., Mujtaba, M. A., Goggins, W. C., & Taber, T. E. (2013). Analysis of anti-HLA antibodies in sensitized kidney transplant candidates subjected to desensitization with intravenous immunoglobulin and rituximab. *Transplantation*, 96(2), 182-190.
- Reed, E. F., Rao, P., Zhang, Z., Gebel, H., Bray, R. A., Guleria, I., . . . Gjertson, D. (2013). Comprehensive assessment and standardization of solid phase multiplex-bead arrays for the detection of antibodies to HLA. *American Journal of Transplantation*, 13(7), 1859-1870.
- Sarkar, R. S., Philip, J., & Yadav, P. (2013). Transfusion medicine and solid organ transplant - update and review of some current issues. *Medical Journal Armed Forces India*, 69(2), 162-167.
- Vo, A. A., Petrozzino, J., Yeung, K., Sinha, A., Kahwaji, J., Peng, A., . . . Jordan, S. C. (2013). Efficacy, outcomes, and cost-effectiveness of desensitization using ivig and rituximab. *Transplantation*, 95(6), 852-858.

## **The Heart and Lung Donor**

Manyalich, M. Transplant Procurement Management - Donation and Transplantation Institute (TPM - DTI): A new formula to success in Organ donation (2013) *Transplant Nurses Journal*, 22 (1), pp. 13-18.

Dominguez-Gil, B., Delmonico, F., Shaheen, F.A.M. The critical pathway for deceased donation: Reportable uniformity in the approach to deceased donation (2011) *Transplant International*, 24 (4), pp. 373-378.

Miranda, B., Matesanz, R., Fernandez Lucas, M., Felipe, C., Naya, M.T. Integrated ways to improve cadaveric organ donation (1996) *Transplantation Proceedings*, 28 (1), pp. 96-97.

Ormrod, J.A., Ryder, T., Chadwick, R.J., Bonner, S.M. Experiences of families when a relative is diagnosed brain stem dead: Understanding of death, observation of brain stem death testing and attitudes to organ donation (2005) *Anaesthesia*, 60 (10), pp. 1002-1008.

Rivers, E.P., Buse, S.M., Bivins, B.A., Horst, H.M.

Organ and tissue procurement in the acute care setting: Principles and practice - part 2 (1990) *Annals of Emergency Medicine*, 19 (2), pp. 193-200.

Westphal, G.A., Caldeira Filho, M., Fiorelli, A., Vieira, K.D., Zacliffevis, V., Bartz, M., Wanzuita, R., Teixeira, C., Franke, C., Machado, F.O., Friedman, G., Andrade, J., Matos, J.D., Lamgaro, D.M., Silva, E., Costa, G., Coelho, M.E., Oliveira, M.C., Youssef, N.C., Akamine, N., Duarte, P., Lisboa, R., Mazzali, M., Ferraz Neto, B.H., Task Force of the Brazilian Association, Intensive Medicine, Brazilian Association, Organs Transplantation, Transplantation Center Santa Catarina Guidelines for maintenance of adult patients with brain death and potential for multiple organ donations (2012) *Transplantation proceedings*, 44 (8), pp. 2260-2267.

## **Section 4: Transplant Management**

### 1. Immunology 101

- The concept of self and non-self
- The key components of the immune system
- What parts of this are important in transplantation?

### 2. Immunosuppression: Induction and Maintenance

- Induction - what is it and why are there differences between sites?
- Which drugs are used to maintain the graft?
- Common side-effects

## **References:**

Murphy K. (2012) *Janeway's Immunobiology, 8<sup>th</sup> edition*. New York: Garland Science

Costanzo MR, Hunt SA, Taylor DO, Kirklin JK. (2012) *ISHLT Monograph Series Volume 6: ISHLT Guidelines for the Care of Heart Transplant Recipients*. Philadelphia, PA: Elsevier.

Costanzo MR. Dipchand A. Starling R. Anderson A. Chan M. Desai S. Fedson S. Fisher P. Gonzales-Stawinski G. Martinelli L. McGiffin D. Smith J. Taylor D. Meiser B. Webber S. Baran D. Carboni M. Dengler T. Feldman D. Frigerio M. Kfoury A. Kim D. Kobashigawa J. Shullo M. Stehlik J. Teuteberg J. Uber P. Zuckermann A. Hunt S. Burch M. Bhat G. Canter C. Chinnock R. Crespo-Leiro M. Delgado R. Dobbels F. Grady K. Kao W. Lamour J. Parry G. Patel J. Pini D. Towbin J. Wolfel G. Delgado D. Eisen H. Goldberg L. Hosenpud J. Johnson M. Keogh A. Lewis C. O'Connell J. Rogers J. Ross H. Russell S. Vanhaecke J. (2010) The International Society of Heart and Lung Transplantation Guidelines for the care of heart transplant recipients. *Journal of Heart & Lung Transplantation*. 29(8):914-56.

Heeger PS, Dinavahi R. (2012) Transplant immunology for non-immunologist. *Mount Sinai Journal of Medicine*. 79(3): 376-87.

## **Section 5: Immediate Post Transplant Care**

### **1. Immediate Post Transplant Management**

- ICU management
- Surgical and Medical Complications
- Prophylactic Regimen
- Immunosuppression therapy ( covered in previous section)

### **2. Management of Acute Cellular Rejection and Antibody Mediated Rejection**

- Definitions of acute cellular rejection and antibody mediated rejection
- Management strategies of acute cellular rejection
- Management strategies of antibody mediated (humoral) rejection

### **3. Post operative Patient Education**

- Medication teaching
- Signs and symptoms of infection and rejection
- Monitoring for infection, rejection and changes in medical status
- Follow up care post discharge

## **Immediate Post Transplant Management**

George EL, Guttendorf J. (2011) Lung Transplant. *Critical Care Nursing Clinics of North America*, 23: 481-503.

- Dilling DF, Glanville AR. (2011) Advances in lung transplantation: the year in review. *The Journal of Heart and Lung Transplantation*, 30: 247-251.
- Lee JC, Christie JD, Puchalski J, Lee HJ, Sterman DH. (2011) Primary Graft Dysfunction. *Clinics in Chest Medicine*, 32: 279-293.
- Falk JF, Oh S, Lee CJ, Reddy H, Chaux GE, Lewis MI. (2010) Intermediate and Late Complications of Lung Transplantation. *Medical Management of the Thoracic Surgery Patient*, 335-351.
- Tomás EA, Quero Ríos MI, Robles Arista JC, Algar Algar FJ, Wolf JI, Alvarez Kindelan A, Cerezo Madueño F, Baamonde Laborda C, Guerrero Pabon R, Salvatierra Velazquez A. (2012) Postoperative Complications in the Intensive Care Unit Following Lung Transplantation in Adults: Results in University Hospital Reina Sofia. *Transplantation Proceedings*, 44: 2663-2665.
- Midthun DE, McDougall JC, Peters SG, Scott JP. (1997) Medical Management and Complications in the Lung Transplant Recipient. *Mayo Clinic Proceedings*, 72: 175-184.
- Puchalski J, Lee HJ, Sterman DH. (2011) Airway Complications Following Lung Transplantation. *Clinics in Chest Medicine*, 32: 357-366.
- Vigneswaran WT, Sakiyalak P, Bhorade S, Bakhos M. (2002) Airway complications after isolated lung transplantation. *Transplantation Reviews*, 16: 87-94.
- Allan JS. (2004) Immunosuppression for lung transplantation. *Seminars in Thoracic and Cardiovascular Surgery*, 16: 333-341.
- James S. Allan
- DiNella JV, Bowman J. (2011) Heart Transplantation. *Critical Care Nursing Clinics of North America*, 23: 471-479.
- Klein DG. (2007) Current Trends in Cardiac Transplantation. *Critical Care Nursing Clinics of North America*, 19: 445-460.
- Shah KB, Parameshwar J. (2011) Advances in heart transplantation: The year in review. *The Journal of Heart and Lung Transplantation*, 30: 241-246.

### **Management of Acute Cellular Rejection and Antibody Mediated Rejection**

- Witt CA, Gaut JP, Yusen RD, Byers DE, Iuppa JA, Bain KB, Patterson A, Mohanakumar T, Trulock EP, Hachem RR. (2013) Acute antibody-mediated rejection after lung transplantation. *The Journal of Heart and Lung Transplantation*, 32: 1034-1040.
- Morrell MR, Patterson GA, Trulock EP, Hachem RR. (2009) Acute Antibody-mediated Rejection After Lung Transplantation. *The Journal of Heart and Lung Transplantation*, 28: 96-100.
- Martinu T, Pavlisko EN, Chen DF, Palmer SM. (2011) Acute Allograft Rejection: Cellular and Humoral Processes. *Clinics in Chest Medicine*, 32: 295-310.
- Glanville AR. (2010) Antibody-mediated rejection in lung transplantation: Myth or reality? *The Journal of Heart and Lung Transplantation*, 29: 395-400.



- Chakinala MM, Trulock EP. (2003) Acute allograft rejection after lung transplantation: diagnosis and therapy. *Chest Surgery Clinics of North America*, 13: 525-542.
- Whelan TPM, Hertz MI. (2005) Allograft rejection after lung transplantation. *Clinics in Chest Medicine*, 26: 599-612.
- Reed EF, Demetris AJ, Hammond E, Itescu S, Kobashigawa JA, Reinsmoen NL, Rodriguez ER, Rose M, Stewart S, Suci-Foca N, Zeevi A, Fishbein MC, The International Society for Heart and Lung Transplantation. (2006) Acute Antibody-mediated Rejection of Cardiac Transplants. *The Journal of Heart and Lung Transplantation*, 25: 153-159.
- Pham MX, Lee J. (2013) Chapter 49 - Cardiac Transplant Rejection. *Genomic and Personalized Medicine (Second Edition), Volume 2*: 557-571.
- Mehra M, Crespo-Leiro MG, Dipchand A, Ensminger SM, Hiemann NE, Kobashigawa JA, Madsen J, Parameshwar J, Starling RC, Uber PA. (2010) International Society for Heart and Lung Transplantation working formulation of a standardized nomenclature for cardiac allograft vasculopathy—2010. *The Journal of Heart and Lung Transplantation*, 29: 717-727.
- Kobashigawa J, Crespo-Leiro MG, Ensminger SM, Reichenspurner H, Angelini A, Berry G, Burke M, Czer L, Hiemann N, Kfoury AG, Mancini D, Mohacsi P, Patel J, Pereira N, Platt JL, Reed EF, Reinsmoen N, Rodriguez ER, Rose ML, Russell SD, et al. (2011) Report from a consensus conference on antibody-mediated rejection in heart transplantation. *The Journal of Heart and Lung Transplantation*, 30: 252-269.

### **Post operative Patient Education**

- Williams TJ, Westall G, Snell GI. (2008) Chapter 21 – Lung Transplantation. *Pediatric Respiratory Medicine (Second Edition)*: 283-294.
- George EL, Guttendorf J. (2011) Lung Transplant. *Critical Care Nursing Clinics of North America*, 23: 481-503.
- DiNella JV, Bowman J. (2011) Heart Transplantation. *Critical Care Nursing Clinics of North America*, 23: 471-479.
- Klein DG. (2007) Current Trends in Cardiac Transplantation. *Critical Care Nursing Clinics of North America*, 19: 445-460.
- Witt CA, Meyers BF, Hachem RR. (2012) Pulmonary Infections Following Lung Transplantation *Thoracic Surgery Clinics, Volume 22, Issue 3, August 2012, Pages 403-412*  
Chad A. Witt, Bryan F. Meyers, Ramsey R. Hachem
- Costanzo MR, Dipchand A, Starling R, Anderson A, Chan M, Desai S, Fedson S, Fisher P, Gonzales-Stawinski G, Martinelli L, McGiffin D, Parisi F, Smith J, Taylor D, Meiser B, Webber S, Baran D, Carboni M, Dengler T, et al. (2010) The International Society of Heart and Lung Transplantation Guidelines for the care of heart transplant recipients. *The Journal of Heart and Lung Transplantation*, 29: 914-956.

- Cupples SA. (2011) Transplant Infectious Disease: Implications for Critical Care Nurses. *Critical Care Nursing Clinics of North America*, 23: 519-537.
- Snydman DR, Limaye AP, Potena L, Zamora MR. (2011) Update and Review: State-of-the-Art Management of Cytomegalovirus Infection and Disease Following Thoracic Organ Transplantation. *Transplantation Proceedings*, 43 (Supplement): S1-S17.
- Baas LS, Bell B, Giesting R, McGuire N, Wagoner LE. (2003) Infections in the heart transplant recipient. *Critical Care Nursing Clinics of North America*, 15: 97-108.
- Labarrere CA, Jaeger BR. (2012) Biomarkers of heart transplant rejection: the good, the bad, and the ugly! *Translational Research*, 159: 238-251.

### **Section 5: Care of the Patient with Special Needs**

1. Poor Social Support and Low Socioeconomic Status
  - Why is social support important?
  - Why is socioeconomic status important?
  - What are some key principles in caring for these patients?
2. Low Health Literacy and Adherence
  - Overview of health literacy and why it's important
  - How to determine level of health literacy
  - Within the above context, strategies for improving adherence
3. Care of the Very Young, School Age and Adolescent
  - What's different about the 3 age groups?
  - What are some key concepts in managing each group?
  - A short discussion about transitions
4. Care of the Older Aged Patient
  - What defines older age?
  - Frailty and it's impact on care
  - Long-term issues

### **References:**

#### **Poor Social Support and Low Socioeconomic Status**

- Mehra MR. Kobashigawa J. Starling R. Russell S. Uber PA. Parameshwar J. Mohacsi P. Augustine S. Aaronson K. Barr M. (2006) Listing criteria for heart transplantation: International Society for Heart and Lung Transplantation guidelines for the care of cardiac transplant candidates--2006. *Journal of Heart & Lung Transplantation*. 25(9):1024-42.
- Cupples S. Dew MA. Grady KL. De Geest S. Dobbels F. Lanuza D. Paris W. (2006) Report of the Psychosocial Outcomes Workgroup of the Nursing and Social Sciences Council of the

International Society for Heart and Lung Transplantation: present status of research on psychosocial outcomes in cardiothoracic transplantation: review and recommendations for the field. *Journal of Heart & Lung Transplantation*. 25(6):716-25.

### **Low Health Literacy and Adherence**

McDermott R. (2008) Medical decision making: lessons from psychology. *Urologic Oncology*. 26(6):665-8.

Kahneman D. (2011) *Thinking Fast and Slow*. London: Allen Lane.

Cupples S. Dew MA. Grady KL. De Geest S. Dobbels F. Lanuza D. Paris W. (2006) Report of the Psychosocial Outcomes Workgroup of the Nursing and Social Sciences Council of the International Society for Heart and Lung Transplantation: present status of research on psychosocial outcomes in cardiothoracic transplantation: review and recommendations for the field. *Journal of Heart & Lung Transplantation*. 25(6):716-25.

### **Care of the Very Young, School Age and Adolescent**

Canter CE. Shaddy RE. Bernstein D. Hsu DT. Chrisant MR. Kirklin JK. Kanter KR. Higgins RS. Blume ED. Rosenthal DN. Boucek MM. Uzark KC. Friedman AH. Young JK. American Heart Association Council on Cardiovascular Disease in the Young. American Heart Association Council on Clinical Cardiology. American Heart Association Council on Cardiovascular Nursing. American Heart Association Council on Cardiovascular Surgery and Anesthesia. Quality of Care and Outcomes Research Interdisciplinary Working Group. (2007) Indications for heart transplantation in pediatric heart disease: a scientific statement from the American Heart Association Council on Cardiovascular Disease in the Young; the Councils on Clinical Cardiology, Cardiovascular Nursing, and Cardiovascular Surgery and Anesthesia; and the Quality of Care and Outcomes Research Interdisciplinary Working Group. *Circulation*, 115(5):658-76.

### **Care of the Older Aged Patient**

Kniepeiss D, Wagner D, Pienaar S., Thaler HW, Porubsky C, Tscheliessnigg KH, Roller RE. (2012) Solid organ transplantation: technical progress meets human dignity: a review of the literature considering elderly patients' health related quality of life following transplantation. *Ageing Research Reviews*. 11(1):181-7.

Kilic A. Weiss ES. Yuh DD. Shah AS. Conte JV. (2012) Factors associated with 5-year survival in older heart transplant recipients. *Journal of Thoracic & Cardiovascular Surgery*. 143(2):468-74.

Afilalo J, Karunanathan S, Eisenberg MJ, Alexander KP, Bergman H. (2009) Role of frailty in patients with cardiovascular disease. *American Journal of Cardiology*. 103(11):1616-21.

## **Section 6: Long Term Followup**

1. Follow up Surveillance program (include common complications diabetes, HTN, hypercholesterolemia)
  - Current recommendations
  - Role of the surveillance biopsy
  - Non-transplant complications, frequencies, and treatment strategies
2. Return to Work, School and Quality of Life
  - Barriers to return to normal activities
  - Strategies to facilitate successful reintegration into the community
  - Return to school issues
  - Achieving acceptable quality of life
3. Infection and Malignancy
  - Common infections and their timing in the post-transplant period
  - Prevention and treatment of infections
  - Malignancy Risk
  - Prevention and treatment of malignancy
4. Chronic Rejection: BOS and CAV
  - Signs and symptoms
  - Current treatment strategies
  - Retransplantation

### **References:**

#### **Work Status after Transplant**

- De Baere C, Delva D, Kloeck A, et. al. Return to Work and Social Participation: Does Type of Organ Transplantation Matters? *Clinical Transplantation* 2010; 20:1-7.
- White-Williams C, Jalowiec A, Grady K. Who Returns to Work after Heart Transplantation? *J Heart Lung Transplant*. 2005; 24(12):2255-2261.
- White-Williams C, Wang E Rybarczyk B, Grady K. Factors Associated with Work 5 to 10 Years after Heart Transplantation. *Clinical Transplantation*. 2011;Nov-Dec;25(6):E599-605.
- Cicutto L, Braidy C, Moloney S et. al. Factors affecting attainment of paid employment after lung transplantation. *J Heart Lung Transplant* 2004; 23(4):481-6.
- Kristen AV, Ammon K, Kock A, et al. Return to Work after Heart Transplantation: Discrepancy with Subjective Work Ability Transplantation 2009; 87(7):1001-1005.
- Sahota A, Zaghla H, Adkin R, et. al. Predictors of employment after liver transplantation. *Clinical Transplantation* 2006; 20:490-5.

#### **Return to School after Transplant**

- Boonen H & Petry K. How do children with a chronic or long-term illness perceive their school re-entry after a period of homebound instruction? *Child: Care, Health and Development*, 2011; 1-7.

Grieve AJ, Tluczek A, Rachine-Gilles C, Laxova A, Albers CA, & Farrell PM. Associations between academic achievement and psychosocial variables in adolescents with cystic fibrosis. *Journal of School Health*, 2011; 81(11): 713-720.

Gurney JG, Krull KR, Kadan-Lottick K et. al. Social outcomes in the childhood cancer survivor study cohort. *J Clinical Oncology*, 2009; 27(14): 2390-2395.

Kliebenstein MA & Broome ME. School re-entry for the child with chronic illness: Parent and school personnel perceptions. *Pediatric Nursing*, 2000; 26 (6): 579-584.

Weil CM, Rodgers S, & Rubovits S. School re-entry of the pediatric heart transplant recipient. *Pediatric Transplantation*, 2006; 10: 928-933.

Wray J, Long T, Radley-Smith R, Yacoub, M. Returning to school after heart or heart-lung transplantation: How well do children adjust? *Transplantation*, 2001; 72(1):100-106.

### **Transition Models**

Naylor, M., D., Aiken, L., H., Kurtzman, E., T., Olds, D., M., & Hirschman, K., B. (2011). The importance of transitional care in achieving health reform. *Health Affairs*, 30(4), 746-754.

Nosbusch, J., M., Weiss, M., E., & Bobay, K., L. (2011). An integrated review of the literature on challenges confronting the acute care staff nurse in discharge planning. *Journal of Clinical Nursing*, 20(5), 754-774. doi:10.1111/j.1365-2702.2010.03257.x

Wakefield, B. J., Boren, S. A., Groves, P. S., & Conn, V. S. (2013). Heart failure care management programs: A review of study interventions and meta-analysis of outcomes. *The Journal of Cardiovascular Nursing*, 28(1), 8-19. doi:10.1097/JCN.0b013e318239f9e1

### **Transition for Pediatric to Adult**

LaRosa, C., Giah, G., Baturarte, J., & Meyers, K. (2011). "Solid-organ transplantation in childhood: transitioning to adult health care". *Pediatrics*, 127(4), p.742-753.

Bell, L. & Sawyer, S. (2010). "Transition of care to adult services for pediatric solid-organ transplant recipients". *The Pediatric clinics of North America*, 57(2), p.593-610.

Lerret, Stacey Marie (2012). "Essential components of transition to adult transplant services: the transplant coordinators' perspective". *Progress in transplantation*, 22(3), p.252-258.

Annunziato, R., & Shemesh., E.(2010). "Tackling the spectrum of transition: what can be done in pediatric settings?". *Pediatric transplantation(1397-3142)*, 14(7), p.820-822.

Bell LE, Bartosh SM, Davis CL, Dobbels F, Al-Uzri A, Lotstein D, Reiss J, Dharnidharka VR. (2008) Adolescent Transition to Adult Care in Solid Organ Transplantation: a consensus conference report. *Am J Transplant*, Nov;8(11):2230-42.

### **Infection and Malignancy**

Mooney ML, Hannan MM, Husain S, Kirklin JK., Eds. (2011) *Diagnosis and Management of Infectious Diseases in Cardiothoracic Transplantation and Mechanical Circulatory Support* (ISHLT Monograph Series). Philadelphia: Elsevier. published 2011

Costanzo MR, Hunt SA, Taylor DA, Kirklin JK., Eds. (2012) *ISHLT Guidelines for the Care of Heart Transplant Recipients* (ISHLT Monograph Series()). Philadelphia: Elsevier.

- Sigurdardottir V, Bjortuft O, Eiskjaer H, Ekmeahag B, Gude E, Gustafsson F, Hagerman I, Halme M, Lommi J, Mared L, Riise GC, Simonsen S. (2012) Long-term follow-up of lung and heart transplant recipients with pre-transplant malignancies. *Journal of Heart & Lung Transplantation*. 31(12) :1276-80.
- Corbett C, Armstrong MJ, Neuberger J. (2012) Tobacco smoking and solid organ transplantation. *Transplantation*, 94(10): 979-87.
- Sampaio MS, Cho YW, Qazi Y, Bunnapradist S, Hutchinson IV, Shah T. (2012) Posttransplant malignancies in solid organ adult recipients: an analysis of the U.S. National Transplant Database. *Transplantation*, 94(10): 990-8.

### **BOS**

- Hayes, D., Jr. (2011). A review of bronchiolitis obliterans syndrome and therapeutic strategies. *Journal of Cardiothoracic Surgery*, 6, 92.
- Kastelijjn, E. A., van Moorsel, C. H., Ruven, H. J., Lammers, J. W., & Grutters, J. C. (2012). Genetic polymorphisms and bronchiolitis obliterans syndrome after lung transplantation: Promising results and recommendations for the future. *Transplantation*, 93(2), 127-135.
- Kennedy, V. E., Todd, J. L., & Palmer, S. M. (2013). Bronchoalveolar lavage as a tool to predict, diagnose and understand bronchiolitis obliterans syndrome. *American Journal of Transplantation*, 13(3), 552-561.
- Khan, M. A., & Nicolls, M. R. (2013). Complement-mediated microvascular injury leads to chronic rejection. *Advances in Experimental Medicine & Biology*, 735, 233-246.
- Todd, J. L., & Palmer, S. M. (2011). Bronchiolitis obliterans syndrome: The final frontier for lung transplantation. *Chest*, 140(2), 502-508.
- Verleden, G. M., Vos, R., De Vleeschauwer, S. I., Willems-Widyastuti, A., Verleden, S. E., Dupont, L. J., . . . Vanaudenaerde, B. M. (2009). Obliterative bronchiolitis following lung transplantation: From old to new concepts? *Transplant International*, 22(8), 771-779.
- Zamora, M. R. (2012). Updates in lung transplantation. *Clinical Transplants*, , 185-192.

### **CAV**

- Braga, J. R., Santos, I. S., McDonald, M., Shah, P. S., & Ross, H. J. (2012). Factors associated with the development of cardiac allograft vasculopathy--a systematic review of observational studies. *Clinical Transplantation*, 26(2), E111-24.
- Colvin-Adams, M., & Agnihotri, A. (2011). Cardiac allograft vasculopathy: Current knowledge and future direction. *Clinical Transplantation*, 25(2), 175-184.
- Crespo-Leiro, M. G., Marzoa-Rivas, R., Barge-Caballero, E., & Paniagua-Martin, M. J. (2012). Prevention and treatment of coronary artery vasculopathy. *Current Opinion in Organ Transplantation*, 17(5), 546-550.
- Dandel, M., & Hetzer, R. (2010). Impact of immunosuppressive drugs on the development of cardiac allograft vasculopathy. *Current Vascular Pharmacology*, 8(5), 706-719.

- Jeewa, A., Dreyer, W. J., Kearney, D. L., & Denfield, S. W. (2012). The presentation and diagnosis of coronary allograft vasculopathy in pediatric heart transplant recipients. *Congenital Heart Disease, 7*(4), 302-311.
- Kindel, S. J., & Pahl, E. (2012). Current therapies for cardiac allograft vasculopathy in children. *Congenital Heart Disease, 7*(4), 324-335.
- Millington, T. M., & Madsen, J. C. (2009). Innate immunity in heart transplantation. *Current Opinion in Organ Transplantation, 14*(5), 571-576.
- Suzuki, J., Isobe, M., Morishita, R., & Nagai, R. (2010). Characteristics of chronic rejection in heart transplantation: Important elements of pathogenesis and future treatments. *Circulation Journal, 74*(2), 233-239.
- Suzuki, J., Ogawa, M., Hirata, Y., Nagai, R., & Isobe, M. (2012). Effects of immunoglobulin to prevent coronary allograft vasculopathy in heart transplantation. *Expert Opinion on Therapeutic Targets, 16*(8), 783-789.

## **Section 7: Caring for Ourselves and Others**

1. Care for the Caregivers
  - Outline the makeup of those who provide care for thoracic transplant patients.
  - Describe the experience of caregivers both pre-transplant and post-transplant
  - List potential interventions for caregivers who are struggling with the caregiver role.
  - Discuss the rewards identified by caregivers for performing the role.
2. Caring at the End of Life
  - Describe the evolution of the involvement of palliative care providers in the thoracic transplant team.
  - Discuss the ethical and practical challenges of offering hope through transplantation while also helping patients and families to prepare for end of life
  - List specific palliative interventions that can be of benefit to thoracic transplant patients.
3. Career Development Strategies for Transplant Professionals
  - Outline steps along a potential career path for a transplant professional
  - Describe strategies to prepare for a career in transplantation
  - How do we stimulate interest in others for a transplant career to provide for controlled succession planning?
  - Growing the network – helping others to become active in transplant organizations like ISHLT.
4. Work-Life Balance for the Transplant Professional – Making it Work
  - Strategies to define work-life balance for the individual
  - How to strategically say “no”

- Time Management
- Stress relief

## References:

### Care for the Caregivers

- Egerod I. Overgaard D. (2012) Taking a back seat: support and self-preservation in close relatives of patients with left ventricular assist device. *European Journal of Cardiovascular Nursing.* 11: 380-7.
- Myaskovsky L. Posluszny DM. Schulz R. DiMartini AF. Switzer GE. DeVito Dabbs A. McNulty ML. Kormos RL. Toyoda Y. Dew MA. (2012) Predictors and outcomes of health-related quality of life in caregivers of cardiothoracic transplant recipients. *American Journal of Transplantation.* 12: 3387-97.
- Ozbaran B. Kose S. Yagdi T. Engin C. Erermis S. Yazici KU. Noyan A. Ozbaran M. (2012) Depression and anxiety levels of the mothers of children and adolescents with left ventricular assist devices. *Pediatric Transplantation.* 16: 766-70.
- Rosenberger EM. Dew MA. DiMartini AF. DeVito Dabbs AJ. Yusen RD. (2012) Psychosocial issues facing lung transplant candidates, recipients and family caregivers. *Thoracic Surgery Clinics.* 22: 517-29.
- Sadala ML. Stolf NG. Bocchi EA. Bicudo MA. (2013) Caring for heart transplant recipients: The lived experience of primary caregivers. *Heart & Lung.* 42: 120-5
- Xu J. Adeboyejo O. Wagley E. Aubrecht J. Song MK. Thiry L. Dabbs AD. (2012) Daily burdens of recipients and family caregivers after lung transplant. *Progress in Transplantation.* 22: 41-7.
- Young LE. Molzahn A. Starzomski R. Budz B. (2010) Families and heart transplantation: reversing the trajectory of end stage heart disease. *Canadian Journal of Cardiovascular Nursing.* 20: 6-17.

### End of Life in Transplantation

- Dipchand, A. "Decision-making in the face of end-stage organ failure: high-risk transplantation and end-of-life care". *Current opinion in organ transplantation*, 2012;17(5); 520-524.
- Tanner CE, Fromme EK, Goodlin SJ. (2011) Ethics in the treatment of advanced heart failure: palliative care and end-of-life issues. *Congestive Heart Failure*, 17(5): 235-40.
- Maclver J, Rao V, Delgado DH, Desai N, Ivanov J, Abbey S, Ross HJ. (2008) Choices: a study of preferences for end-of-life treatments in patients with advanced heart failure. *Journal of Heart & Lung Transplantation*, 27(9): 1002-7.

### Career Development

- Benner, P. (2011) Formation in professional education: An examination of the relationship between theories of meaning and theories of the self. *Journal of Medicine and Philosophy*, 36: 342-353.



- Benner, P., Sutphen, M., Leonard-Kahn, V., Day, L. (2008) Formation and everyday ethical comportment *American Journal of Critical Care*, 17: 473-476.
- Goodloe, L. R., Sampson, R. C., Munjas, B., Whitworth, T. R., Lantz, C. D., Tangley, E., & Miller, W. (1996). Clinical ladder to professional advancement program: An evolutionary process. *Journal of Nursing Administration*, 26: 58-64.
- Hadidi, N. N., Lindquist, R., & Buckwalter, K. (2013). Lighting the fire with mentoring relationships. *Nurse Educator*, 38: 157-163.
- Hess, C. (2013). Health care educators: New directions in leadership development. *Journal of Leadership Studies*, 6: 72-76.
- Hickey, N., Sumsion, J., & Harrison, L. (2013). Why nursing? applying a socio-ecological framework to study career choices of double degree nursing students and graduates. *Journal of Advanced Nursing*, 69: 1714-1724.
- Pancheri, K., Fowler, D. L., Wiggs, C. M., Schultz, R., Lewis, P., & Nurse, R. (2013). Fostering completion of the doctor of philosophy degree through scholarly collegial support. *Journal of Continuing Education in Nursing*, 44: 309-312.
- Rice, E.M., Rady, M.Y., Hamrick, A., Verheijde, J.L., Pendergast, D.K. (2008) Determinants of moral distress in medical and surgical nurses at an adult acute tertiary care hospital *Journal of Nursing Management*, 16: 360-373.
- Russell, C. L., & Van Gelder, F. (2008). An international perspective: Job satisfaction among transplant nurses. *Progress in Transplantation*, 18: 32-40.
- Toh, S.G.<sup>a b c</sup>, Ang, E.<sup>a b c d</sup>, Kamala Devi, M.<sup>a</sup> (2012) Systematic review on the relationship between the nursing shortage and job satisfaction, stress and burnout levels among nurses in oncology/haematology settings *International Journal of Evidence-Based Healthcare*, 10: 126-141.
- Tummers, L. G., Groeneveld, S. M., & Lankhaar, M. (2013). Why do nurses intend to leave their organization? A large-scale analysis in long-term care. *Journal of Advanced Nursing*.

### **Work Life Balance**

- Buettner L. Shattell M. Reber M. (2011) Working hard to relax: improving engagement in leisure time activities for a healthier work-life balance. *Issues in Mental Health Nursing*. 32: 269-70.
- Carter MR. Tourangeau AE. (2012) Staying in nursing: what factors determine whether nurses intend to remain employed? *Journal of Advanced Nursing*. 68: 1589-600.
- Lehmann-Willenbrock N. Lei Z. Kauffeld S. (2012) Appreciating age diversity and German nurse well-being and commitment: co-worker trust as the mediator. *Nursing & Health Sciences*. 14: 213-20.
- Munir F. Nielsen K. Garde AH. Albertsen K. Carneiro IG. (2012) Mediating the effects of work-life conflict between transformational leadership and health-care workers' job satisfaction and psychological wellbeing. *Journal of Nursing Management*. 20: 512-21.