

2021 ACCP/ASHP Solid Organ Transplantation Pharmacy Review Course Learning Objectives

2021 Solid Organ Transplantation Pharmacy Review Course – Transplant

Immunology

Universal Activity Number: 0217-9999-21-161-H01-P

1.25 contact hours

LO#1: Differentiate between components of innate and adaptive immunity.

LO#2: Review lymphocyte activation, differentiation and effect mechanisms.

LO#3: Discuss pathways of allorecognition and transplant rejection and injury. LO#4: Assess immunologic risk of rejection.

LO#5: Describe pathways to immunologic tolerance of allograft.

2021 Solid Organ Transplantation Pharmacy Review Course – Induction and Management of Acute Cellular Rejection

Universal Activity Number: 0217-9999-21-162-H01-P

1.00 contact hours

LO#1: Outline the principles of induction immunosuppression and how these agents can be used for different organs.

LO#2: Compare and contrast the available induction agents; specifically focusing on mechanism of action, ease of administration, adverse events and economic impact.

LO#3: Evaluate the efficacy of induction therapy among the different organs.

LO#4: Design an induction regimen based on the type of transplant and the patient's clinical presentation.

LO#5: Compare and contrast the agents available for the treatment of acute cellular rejection.

LO#6: Assess the optimal therapeutic options for management of acute cellular rejection.

2021 Solid Organ Transplantation Pharmacy Review Course – Maintenance of Immunosuppression Part One

Universal Activity Number: 0217-9999-21-163-H01-P

1.50 contact hours

LO#1: Differentiate between the pharmacokinetic profiles of immunosuppressive medication formulations utilized in solid organ transplantation.

LO#2: Select the appropriate method for therapeutic drug monitoring of immunosuppressive medications.

LO#3: Design an initial immunosuppression regimen for a solid organ transplant recipient utilizing a patient's pharmacogenomic data.

LO#4: Revise an immunosuppression regimen for a solid organ transplant recipient based on the presence of pertinent drug-drug interactions.

LO#5: Assess patient-specific data to identify immunosuppression-related adverse effects.

LO#6: Design an appropriate monitoring plan for immunosuppressive medications.

2021 Solid Organ Transplantation Pharmacy Review Course – Kidney Transplantation

Universal Activity Number: 0217-9999-21-165-H01-P

1.00 contact hours

LO#1: Evaluate effects of nonadherence on long-term allograft survival.

LO#2: Assess non-pharmacologic and pharmacologic risks of patients undergoing kidney transplant evaluation.

LO#3: Distinguish between absolute and relative contraindications to kidney transplant.

LO#4: Differentiate pathophysiology of and design management strategies for allograft specific complications.

LO#5: Design modifications to therapy that account for patient-specific factors, immunologic risk, and complications after kidney transplant.

LO#6: Assess barriers after kidney transplant and implement strategies to improve adherence.

2021 Solid Organ Transplantation Pharmacy Review Course – Liver Transplantation

Universal Activity Number: 0217-9999-21-166-H01-P

1.00 contact hours

LO#1: Distinguish acceptable indications for liver transplantation.

LO#2: Assess liver transplant and living donor candidates for pharmacologic and non-pharmacologic risks using appropriate assessment tools.

LO#3: Evaluate a liver transplant candidate's immunologic risks and propose immunosuppressive regimens.

LO#4: Interpret pertinent patient care related information to manage immunosuppression and comorbid conditions.

LO#5: Differentiate between immunologic and non-immunologic complications after liver transplant.

LO#6: Evaluate potential causes of medication non-adherence after liver transplantation.

2021 Solid Organ Transplantation Pharmacy Review Course – Pancreas and Islet Cell Transplantation, Intestinal Transplantation

Universal Activity Number: 0217-9999-21-167-H01-P

1.25 contact hours

Pancreas and Islet Cell Transplantation

LO#1: Demonstrate an understanding for common complications of pancreas transplantation and develop strategies to prevent or treat these complications.

LO#2: Devise a monitoring strategy to evaluate exocrine and endocrine function after pancreas transplantation.

LO#3: Compare and contrast the advantages and disadvantages of pancreas and islet cell transplantation.

Intestinal Transplantation

LO#1: Describe the etiologies of small bowel transplantation.

LO#2: List the current trends in immunosuppression for small bowel transplantation.

LO#3: Discuss the common complications observed after small bowel transplantation.

2021 Solid Organ Transplantation Pharmacy Review Course – Heart Transplantation

Universal Activity Number: 0217-9999-21-168-H01-P

1.00 contact hours

LO#1: Describe common indications that may lead to cardiac transplantation.

LO#2: Identify pre-transplant risk factors that may impact outcomes after cardiac transplantation.

LO#3: Describe cardiac specific techniques for rejection surveillance.

LO#4: Understand cardiac specific pathologic findings.

LO#5: List and discuss cardiac specific post-transplant complications and strategies for management.

2021 Solid Organ Transplantation Pharmacy Review Course – Lung Transplantation

Universal Activity Number: 0217-9999-21-169-H01-P

1.25 contact hours

LO#1: Describe diagnoses that may lead to end-stage lung disease and referral for lung transplantation.

LO#2: Identify indications, absolute contraindications, and relative contraindications for lung transplantation.

LO#3: Formulate a medication regimen for a lung transplant recipient, taking into account immunologic risks and needs, preventative needs, and comorbid diseases.

LO#4: Explain the objective testing used to evaluate lung allograft function.

LO#5: Summarize the presentation and management of common immunologic complications after lung transplantation.

LO#6: Summarize the presentation and management of common non-immunologic complications after lung transplantation.

2021 Solid Organ Transplantation Pharmacy Review Course – Maintenance of Immunosuppression Part Two

Universal Activity Number: 0217-9999-21-170-H01-P

2.25 contact hours

Kidney

LO#1: Create an evidence-based maintenance regimen for a kidney transplant recipient that accounts for patient-specific factors.

LO#2: Evaluate the role of extended-release tacrolimus formulations and novel immunosuppression regimens.

Liver

LO#1: Compare and contrast maintenance immunosuppression regimens for liver transplant recipients.

LO#2: Design evidence based maintenance immunosuppression regimens for liver transplant recipients.

Pancreas

LO#1: Design a maintenance immunosuppression regimen for the prevention of rejection after pancreas transplant.

LO#2: Design a maintenance immunosuppression regimen for the prevention of rejection after islet cell transplant.

Heart

LO#1: Describe common immunosuppression approaches in cardiac transplantation.

LO#2: Discuss alternate approaches to immunosuppression.

Lung

LO#1: Compare and contrast the benefit, risk, and role of each maintenance immunosuppressant medication in lung transplantation.

LO#2: Design evidence-based maintenance immunosuppression regimens for lung transplant recipients.

2021 Solid Organ Transplantation Pharmacy Review Course – Infection Prevention and Management in Solid Organ Transplant Patients

Universal Activity Number: 0217-9999-21-171-H01-P

1.25 contact hours

LO#1: Develop appropriate pre-transplant serologic testing recommendations and interpretation of these results.

LO#2: Identify risk factors associated with post-transplant infections and the epidemiology and timing of these infections.

LO#3: Design strategies to prevent post-transplant opportunistic infections, including prophylaxis regimens and monitoring parameters.

LO#4: Formulate treatment plans for bacterial, viral, and fungal infections in solid-organ transplant recipients.

LO#5: Develop monitoring plans for patients receiving antimicrobials, complete with management of adverse effects and intolerances.

2021 Solid Organ Transplantation Pharmacy Review Course – Prevention and Management of Malignancy in Solid Organ Transplant Patients

Universal Activity Number: 0217-9999-21-172-H01-P

1.00 contact hours

LO#1: Demonstrate the common pathogenesis of and risk factors for types of malignancy after solidorgan transplant.

LO#2: Distinguish between the types of malignancy that are of increased risk before and after solidorgan transplant.

LO#3: Assess preventative strategies for malignancy after transplantation.

LO#4: Diagram an overview of immunosuppression management in the setting of malignancy.

LO#5: Compare common treatment approaches to common malignancies after transplantation, including non-melanoma skin cancer, post-transplant lymphoproliferative disorder, and Kaposi'ssarcoma.

2021 Solid Organ Transplantation Pharmacy Review Course – Primary Care of the Solid Organ Transplant Patient

Universal Activity Number: 0217-9999-21-173-H01-P

0.75 contact hours

LO#1: Apply general principles and practices of disease prevention to solid organ transplant recipients.

LO#2: Outline unique patient populations that require additional disease screening.

LO#3: Create an immunization plan for a solid organ transplant recipient in both the pre and post-transplant setting.

LO#4: Identify reputable resources for public education and awareness on organ transplantation including organ donation.

2021 Solid Organ Transplantation Pharmacy Review Course – Special Considerations in Pediatric and Geriatric Transplant Populations

Universal Activity Number: 0217-9999-21-174-H01-P

2.00 contact hours

Pediatrics

LO#1: Discuss practical differences of medication use in children with emphasis on pharmacokinetics, formulations, and monitoring of commonly used immunosuppressants.

LO#2: Describe the etiologic differences for end stage organ disease and discuss associated complications after solid organ transplant in children.

LO#3: Design a pharmacotherapeutic treatment plan for pediatric patients undergoing intended ABO incompatible organ transplantation.

LO#4: Formulate an immunization plan for a pediatric organ transplant candidate.

Geriatrics

LO#1: Compare outcomes of transplant recipients by age group.

LO#2: Evaluate geriatric candidates for transplant based on guideline recommendations.

LO#3: Distinguish pharmacokinetic differences among geriatric transplant recipients.

LO#4: Design an immunosuppression regimen for a geriatric transplant recipient.

2021 ACCP/ASHP Ambulatory Care Pharmacy Preparatory Review and Recertification Course - Trial Design and Biostatistics

Universal Activity Number: 0217-9999-21-050-H04-P

2.50 contact hours

LO#1: Describe hypothesis testing and state the meaning of and distinguish between p values and confidence intervals and measures of central tendency and data spread.

LO#2: Define, compare, and contrast the concepts of internal and external validity, causation, association,

bias, and confounding in trial design. Select strategies to eliminate or control for bias and improve internal and external validity.

LO#3: Compare and contrast the advantages and disadvantages of various study designs (e.g., prospective, retrospective, case-control, cohort, cross-sectional, randomized controlled clinical trials, systematic review, meta-analysis).

LO#4: Determine why a statistical test is appropriate or not appropriate, given the sample distribution, data type, and study design. Interpret statistical and clinical significance for results from commonly used statistical tests.

LO#5: Define and evaluate odds ratio, risk/incidence rate, relative risk, number needed to treat, number needed to harm, and other risk estimates.

2021 Solid Organ Transplantation Pharmacy Review Course – Continuity of Care and Managing Transitions of Care in the Transplant Patient

Universal Activity Number: 0217-9999-21-175-H04-P

1.50 contact hours

LO#1: Describe the importance of accurate medication, allergy and immunization histories and medication reconciliation in solid organ transplant recipients.

LO#2: Compare the incidence of index length of stay and hospital readmissions among various solid organ transplant recipients.

LO#3: Evaluate the unique role of a pharmacist in the transition of solid organ transplant recipients between healthcare settings as it relates to medication error reduction and cost avoidance.

LO#4: Propose a matrix for roles and responsibilities of the healthcare team in management of transitions and co-management.

LO#5: Differentiate between various medication access resources in solid organ transplant recipients.

LO#6: Illustrate the strategies available for overcoming patient-specific barriers to care following solid organ transplantation.

2021 Solid Organ Transplantation Pharmacy Review Course – Transplant Regulations and Performance Improvement

Universal Activity Number: 0217-9999-21-176-H04-P

1.25 contact hours

LO#1: Review regulations for solid organ transplantation (SOT).

LO#2: Compose policies and procedures for SOT pharmacists that are consistent with transplant regulatory requirements.

LO#3: Identify opportunities for SOT pharmacists to participate in QAPI activities to enhance the safety and effectiveness of medication-use process in SOT.

LO#4: Evaluate compliance with institutional guidelines in order to identify areas failing to meet expectations and implement performance improvement initiatives.

LO#5: Implement processes for cost effective care focusing on continuous quality improvement, patient safety and outcomes in order to justify modifications in transplantation pharmacy services.

LO#6: Diagram involvement of SOT pharmacists in collaborative relationships with interdisciplinary transplant team to promote quality patient care across continuum.

2021 Solid Organ Transplantation Pharmacy Review Course – Transplant Resources, Patient Education, and Transplant Study Endpoints

Universal Activity Number: 0217-9999-21-177-H04-P

1.00 contact hours

LO#1: List key government organizations and transplant societies that influence the practice of solid organ transplantation.

LO#2: Compare practice-defining guidelines within the field of solid organ transplantation.

LO#3: Assess patients' barriers to understanding their medication regimen and adapt education strategy to foster patient competency.

LO#4: Describe appropriate monitoring strategies for transplant medications requiring REMS participation.

LO#5: Formulate an appropriate contraceptive regimen for a female transplant recipient of childbearing age.

LO#6: Evaluate patient risk factors for non-adherence and implement a plan to improve compliance.

LO#7: Review transplant study end points used in the literature to establish efficacy of clinical intervention.