Pharmacy Grand Rounds

200 First Street SW
Rochester, Minnesota 55905
https://ce.mayo.edu/pharmacy-grandrounds-2026

Therapeutic Drug Monitoring for Two: Immunosuppression in Pregnancy

Session Date: 11/17/2026
Session Time: 11:00 – 11:45 AM (CST)

Target Audience

This continuing education (CE) session was planned to meet the needs of professional staff who deal with the selection and monitoring of medication(s) as part of their patient care duties, including pharmacists, RNs, APRNs, PAs, MDs.

Activity Overview

Many physiologic changes occur in pregnancy that alter medication pharmacokinetics. This is incredibly important in transplant recipients, as these physiologic changes must be balanced with graft preservation and fetal safety. Tacrolimus and mycophenolate make up the backbone of many immunosuppression regimens, and both drugs have important clinical considerations for use in pregnancy. For tacrolimus, drug monitoring is challenging as many changes in pregnancy alter whole blood drug levels typically utilized to guide dosing. For mycophenolate, teratogenicity has historically been addressed with a REMS program, but this has recently been discontinued despite the risk still being present. This presentation will review literature on mycophenolate use in transplant recipients of child-bearing potential and tacrolimus monitoring in pregnancy post-transplant.

Learning Objectives

At the conclusion of this knowledge-based CE session, participants should be able to:

1. Analyze how physiologic changes in pregnancy may affect medication pharmacokinetics and allograft outcomes.
2. Identify best practices for mycophenolate use in individuals of childbearing potential and the implications of REMS discontinuation for prescribing.
3. Evaluate how physiologic changes in pregnancy affect tacrolimus whole blood levels to guide appropriate dosing and monitoring strategies.

Faculty Information

Maren Steffen, PharmD
PGY1 Pharmacy Resident
Mayo Clinic Hospital - Rochester, MN

Maren Steffen received a Doctor of Pharmacy degree from The University of Arizona R. Ken Coit College of Pharmacy and is a current PGY1 pharmacy resident at Mayo Clinic Hospital – Rochester. Her practice interests include oncology and transplant.



Approved Provider Statement

In support of improving patient care, Mayo Clinic College of Medicine and Science is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.

Credit Statements

AMA

Mayo Clinic College of Medicine and Science designates this live activity for a maximum of 0.75 *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

AAPA

Mayo Clinic College of Medicine and Science has been authorized by the American Academy of Physician Associates (AAPA) to award AAPA Category 1 CME credit for activities planned in accordance with AAPA CME Criteria. This activity is designated for 0.75 AAPA Category 1 CME credits. PAs should only claim credit commensurate with the extent of their participation.

ACPE

ACPE Universal Activity Number (UAN): JA0000238-0000-26-051-L01-P
Mayo Clinic College of Medicine and Science designates this educational activity for a maximum of 0.75 ACPE Knowledge-based contact hours. Participants should claim only the credit commensurate with the extent of their participation in the activity

ANCC

Mayo Clinic College of Medicine and Science designates this activity for a maximum of 0.75 ANCC contact hours. Nurses should claim only the credit commensurate with the extent of their participation in the activity.

IPCE

This activity was planned by and for the healthcare team, and learners will receive 0.75 Interprofessional Continuing Education (IPCE) credit for learning and change.

Educational Format and CE Requirements

This CE session is available as a live presentation, including live webcast.
Participants must complete the following to record attendance and obtain CE credit:

1. Attend the entire session.
2. Text the session code to 507-200-3010 within 48 hours of the live presentation to record attendance.
   a. This number is only used for receiving text messages related to tracking attendance

b. Employees are encouraged to create a contact in their mobile phone, as the same number is used to record attendance for every session

3. Complete the online evaluation for the respective session within 2 weeks of live presentation.

Pharmacist CE credit is electronically transferred to the National Association of Boards of Pharmacy CPE Monitor. To track CE, please go to NABP CPE Monitor.

Non-pharmacist attendees can print out a record of attendance at ce.mayo.edu after completing the evaluation and claiming credit.

Live Webcast – Register from the Education SharePoint site

Disclosure Summary

As a provider accredited by Joint Accreditation for Interprofessional Continuing Education, Mayo Clinic College of Medicine and Science must ensure balance, independence, objectivity and scientific rigor in its educational activities. All who are in a position to control the content are required to disclose all financial relationships with any ineligible company. Faculty will also identify any off-label and/or investigational use of pharmaceuticals or instruments discussed in their content for FDA compliance.

Listed below are individuals with control of the content of this program who have disclosed:

The faculty report the following relationships:

- Maren Steffen, PharmD
  - Declares no financial relationship(s) pertinent to this session
  - Declares off-label use of medications (tacrolimus, cyclosporine, azathioprine, corticosteroids, sirolimus, everolimus, belatacept, and mycophenolic acid) will be discussed during this presentation

Course Director and Planning Committee Members declare the following relevant financial relationship(s) pertinent to this session.

- No relevant financial relationship(s) with ineligible companies:
  - Jennifer Elmer, DNP, APRN, CCNS
  - Andrew Herber, PA-C
  - Sarah Jane Kotval, MEd, BSW, RSS Coordinator
  - Scott Nei, PharmD, BCPS, BCCCP, FCCM, FMSHP

- Relevant financial relationship(s) with ineligible companies:
  - Wayne Nicholson, MD, PharmD, BCPS - Intellectual Property - Anivive Lifesciences, Inc.

All relevant financial relationships have been mitigated.

For additional disclosure information regarding Mayo Clinic School of Continuous Professional Development accreditation review committee members visit ce.mayo.edu, About Us, Disclosures - or - https://ce.mayo.edu/content/disclosures

System and Technical Requirements

For participants viewing the webcast, sessions are delivered via Mayo Clinic intranet web browser and Adobe® PDF. For participants viewing outside the Mayo Clinic firewall, a VPN connection is required for remote access. Recommended web browser includes Google Chrome. This session is planned and coordinated by **the Department of Pharmacy, Mayo Clinic.**