



# Pharmacy Grand Rounds

200 First Street SW  
Rochester, Minnesota 55905  
<https://ce.mayo.edu/pharmacy-grandrounds-2024>

## Get the Knack for NAC: Management of Acetaminophen Overdoses

**Session Date:** 05/14/2024  
**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

Acetaminophen toxicity ranks as the second most common reason for liver transplantation globally and the leading cause in the United States. Acetaminophen overdoses result in approximately 56,000 emergency department visits, 2,600 hospitalizations, and 500 deaths annually in the United States. N-acetylcysteine (NAC) has been the preferred treatment for acetaminophen overdose for over four decades. However, controversy remains regarding the optimal intravenous NAC regimen. Mayo Clinic recently revised its NAC dosing protocol, transitioning from the traditional 3-bag regimen to a 2-bag regimen. This presentation will review the literature comparing various NAC dosing protocols for acetaminophen overdose treatment. Additionally, the presentation will cover the management of massive acetaminophen ingestions and the criteria for discontinuing NAC therapy.

### Learning Objectives

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

1. Describe the mechanism of action of N-acetylcysteine as the standard antidote for acetaminophen overdose.
2. List two benefits of a 2-bag N-acetylcysteine protocol compared to a 3-bag N-acetylcysteine protocol for the treatment of acetaminophen overdose.
3. Describe two instances in which N-acetylcysteine dosing may deviate from the standard 20-hour protocol.

### Faculty Information

Megan Edwards, PharmD  
PGY1 Pharmacy Resident  
Mayo Clinic Hospital - Rochester, MN

Megan Edwards received a Doctor of Pharmacy degree from the University of Nebraska Medical Center College of Pharmacy and is a current PGY1 pharmacy resident at Mayo Clinic Hospital – Rochester. Her practice interests include internal medicine and infectious diseases.



## Approved Provider Statement



JOINT ACCREDITATION™  
INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, this activity is planned and implemented by Mayo Clinic College of Medicine and Science. 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.

#### ACPE



**ACPE Universal Activity Number (UAN):** JA0000238-0000-24-004-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.

#### AAPA



Mayo Clinic College of Medicine and Science has been authorized by the American Academy of PAs (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.

## 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](http://ce.mayo.edu) after completing the evaluation and claiming credit.

[Live Webcast](#) - access during presentation times

## 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:

The faculty report the following relationships:

- Megan Edwards, PharmD
  - Declares no financial relationship(s) pertinent to this session
  - Declares the following off-label use of medications will be discussed during this presentation:
    - N-acetylcysteine

Course Director and Planning Committee Members declare no relevant financial relationship(s) pertinent to this session. Members include:

- Jennifer Elmer, DNP, APRN, CCNS
- Andrew Herber, PA-C
- Sarah Jane Kotval, BSW, RSS Coordinator
- Scott Nei, PharmD, BCPS, BCCCP, FCCM, FMSHP
- Wayne Nicholson, MD, PharmD, BCPS
- Sara Thompson, PharmD, MEd, BCACP

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](http://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.**