

Caught Between Equations: The Shift from Cockcroft Gault to CKD-EPI 2021 and Its Implications for Medication Dosing in Older Adults

Current Topics in Pharmacy Activity Announcement

Multiple comorbidities, polypharmacy, and exposure to renal toxins increase the risk of CKD and complicate the assessment of renal function in older adults. Renal dosage optimization for medications FDA-approved prior to 2009 was based on estimated creatinine clearance (eCrCl) using the Cockcroft Gault (C-G) equation and some variation of weight (actual, ideal, or adjusted) and serum creatinine (Scr). Between 2009-2024, manufacturers used eCrCl or estimated glomerular filtration rate (eGFR) during drug development to recommend renal dosing adjustments. In 2024 a National Kidney Foundation (NKF) workgroup released a consensus statement recommending replacement of eCrCl with a race-free eGFR based on the 2021 CKD-EPIcr-cys equation using Scr and cystatin C (cys) biomarkers standardized for body surface area (BSA). Data in adults 65 years of age and older are limited due to the discordance between the equations available to estimate measured kidney function (e.g., measured CrCl (mCrCl) or measured GFR (mGFR)). This continues to be an area for pharmacist interventions.

This activity was originally recorded on 11/18/2025.

Learning Objectives

At the conclusion of this educational activity, the participant should be able to:

1. Explain the differences in eCrCl (C-G; Scr; body weight), eGFR by 2021 CKD-EPIcr, and 2021 CKD-EPICryst equations standardized for BSA in adults +65 years of age.
2. Summarize the impact on dosage calculations for medications (e.g., cisplatin, gabapentin, and apixaban commonly prescribed in older persons and cleared by renal elimination).

Speaker

Cindy Van, PharmD

Peter Lamy Center on Drug Therapy and Aging Geriatric Pharmacotherapy Fellow
University of Maryland

Dr. Van, speaker for this activity, has no financial relationships to disclose. None of the planners for this activity have any financial relationships to disclose.

CE Credits: 0.5 Contact Hours

Universal Activity Number: 0025-0000-25-117-H01-P

Target Audience: Pharmacists

Activity Type: Knowledge

Activity Launch Date: 11/18/2025

Activity Expiration Date: 11/18/2026

Fee: \$15.00

Criteria for Successful Completion

Learners must complete all activity components including viewing the audiovisual presentation and completing the activity evaluation. A link to the activity evaluation will be available upon successful completion of all other course segments. Statements of CE Credit will be available electronically via CPE Monitor within sixty (60) days of completion of the activity.

Use of Trade Names: The trade names of the drugs and delivery systems in this module are for the purpose of product identification only. This activity does not imply endorsement for any commercial products discussed.

Privacy and Confidentiality: The University of Maryland School of Pharmacy is committed to protecting the privacy of our learners. All enrollees are protected under The Family Educational Rights and Privacy Act (20 U.S.C. § 1232g; 34 CFR Part 99) (FERPA). The UMB Policy on Confidentiality and Disclosure of Student Records can be found at: <https://www.umaryland.edu/policies-and-procedures/library/academic-affairs/policies/iii-630a.php>.

To submit your continuing education credit (CE) to a professional accrediting body, we must collect personal information including, but not limited to, name, NABP ID, and date of birth. When you request CE credits, certain personal information will be provided to the professional certifying entity in order to issue Statements of Credit.

Copyright: Resources are provided for the educational benefit of our learners and are not for distribution. All information and materials provided are the property of and have been prepared by the University of Maryland Baltimore or have been granted permission for use by the copyright owner. No portion of this module may be reproduced or transmitted without written permission. All rights reserved.

Technology Requirements

Supported Internet Browsers	<p>Windows</p> <ul style="list-style-type: none"> Internet Explorer version 11 and above Chrome 43 and above FireFox 4.0 (or later) <p>MacOS</p> <ul style="list-style-type: none"> Safari 13 and above Chrome 43 and above
Minimum Memory	8 GB (or more)
Minimum Storage	6 GB (or more)
Minimum Processor	<p>PC: 2 GHz or faster Intel processor</p> <p>MacOS: Multi-core Intel processor</p>
Minimum Internet Speeds	High speed internet connection
Other	Participants must be able to play audio (either through speakers or headphones) as well as ability to open PDF files and view and edit Word, and PPT documents.



The University of Maryland School of Pharmacy is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.

Refund Policy:

- A refund, less a \$5 administration fee, will be provided if cancellations are requested within 15 days of purchase. Other restrictions may apply. Refund requests must be submitted in writing to CEHelp@rx.umaryland.edu.
- Refunds are not available in the following circumstances: A learner has logged into a course or series; has launched course materials; course materials have been shipped; or request is made after 15 days of the ordering date.
- Course registrations are non-transferrable.

Contact Us:

Office of Continuing Education at the University of Maryland School of Pharmacy

20 N. Pine Street

Baltimore, MD 21201

410.706.3381

CEHelp@rx.umaryland.edu

To learn more or register, visit <https://ce.pharmacy.umaryland.edu>