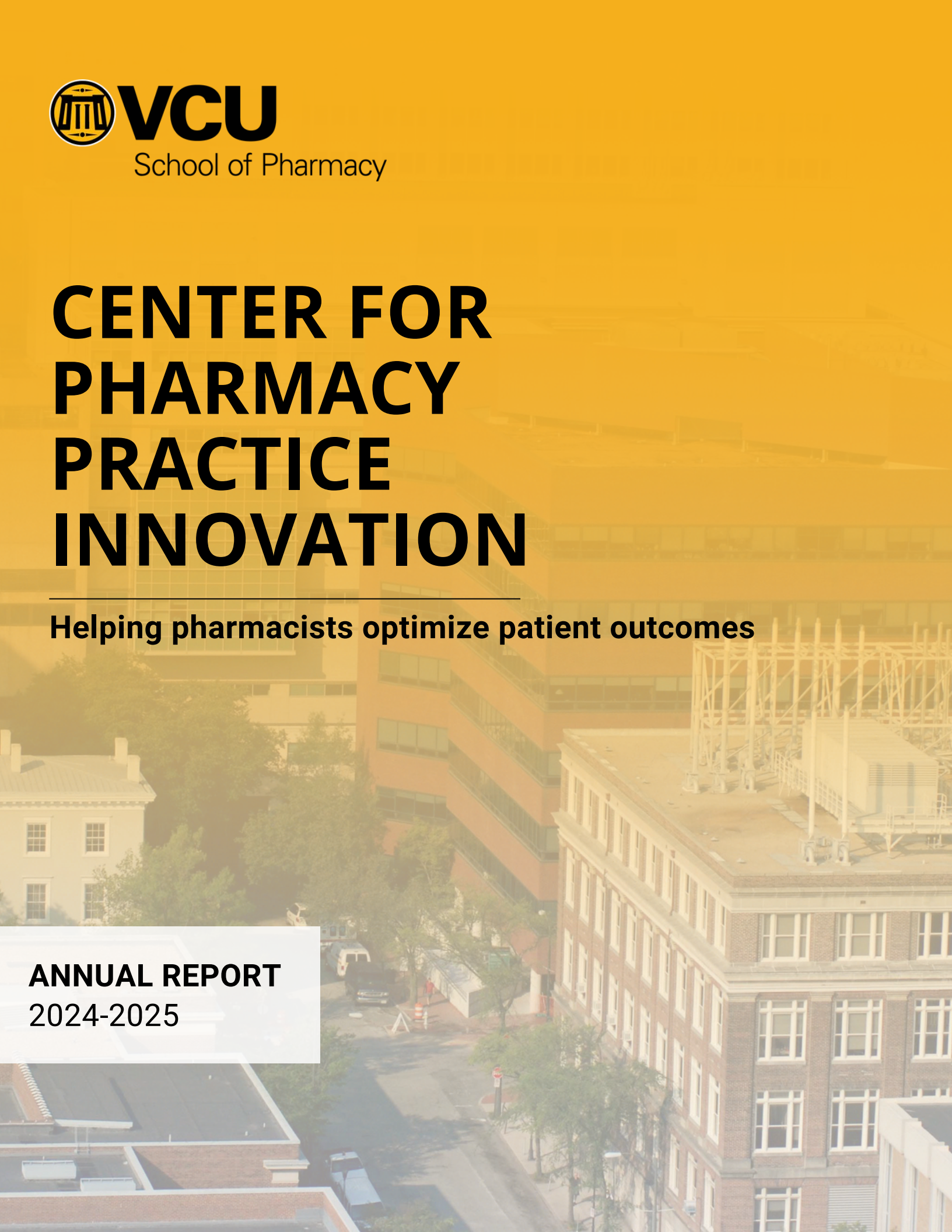
VCU School of Pharmacy

CENTER FOR PHARMACY PRACTICE INNOVATION

Helping pharmacists optimize patient outcomes



ANNUAL REPORT
2024-2025

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MISSION & VISION

Mission: To help pharmacists optimize patient outcomes

Vision: Being a leader in transforming ambulatory and community pharmacy practice and advancing pharmacists' roles on patient-centered, collaborative care teams

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CPPI HISTORY

American health care is at a crossroads. Despite being the most expensive system in the world, quality measures — from infant mortality to life expectancy — lag international peers. In addition, individuals struggle to access satisfactory services, and economic and racial disparities in care remain wide. Because of the aging of the population, the current physician workforce, which is already inadequate, will increasingly be unable to meet the needs of society.

One partial solution to these challenges is transforming the role of pharmacists. Unlike most other professions, pharmacists are not projected to have a workforce shortage. Pharmacists have proven to be effective at improving quality measures and increasing satisfaction. Furthermore, because much of the innovative work in pharmacy has occurred in underserved populations, pharmacists are poised to decrease health disparities.

VCU is well-positioned to lead pharmacy transformation. In 2010, Donald Brophy, chair for the Department of Pharmacotherapy and Outcomes Science, had the foresight to convene a practice transformation working group to identify opportunities for DPOS to be engaged in practice transformation activities in the commonwealth within the context of national health care reform. The group also hosted a one-day invitational Practice Transformation Conference in Richmond in June 2011, where 100 practice leaders convened to discuss innovative models for advancing pharmacist/patient care activities. A peer-reviewed supplement in Annals of Pharmacotherapy in April 2012 described the conference proceedings and the results of the state-wide survey of Virginia pharmacist practice activities. DPOS faculty are already leaders in practice innovation. These include securing extramural funding from the NIH, CMS Innovation Center, Health Resources and Services Administration, and American Pharmacists Association Foundation to implement and test innovative interprofessional care and education models. DPOS faculty have increased the number of interprofessional collaborations and partnerships across the university, Richmond and the commonwealth as a whole to advance practice through patient care, education and research initiatives. These efforts have been recognized by national awards, including the 2014 C. Peter McGrath University/Community Engagement Award and the 2015 American Association of Colleges of Pharmacy Lawrence C. Weaver Transformative Community Service Award. The strong track record of DPOS faculty coupled with the critical need to devise novel solutions to mitigate our nation's health care crisis creates an opportunity to transform practice by developing new care models that provide patient-centered, accessible, comprehensive, coordinated and high quality care. In addition, these models must be tested to determine their value from clinical and economic perspectives and disseminated across populations and settings to improve the health of citizens of the commonwealth and beyond.

DIRECTOR'S MESSAGE

Dear friends and partners,

The past few years have marked a pivotal period of advancement for pharmacy practice in the Commonwealth of Virginia, with several policy developments supporting the expanded role of pharmacists in patient care. Notably, multiple statewide protocols have been approved since 2020, enabling pharmacists to initiate and manage treatments for a range of acute and chronic conditions. These protocols have laid the groundwork for increased access to care, especially in underserved communities. In parallel, progress was made in securing Medicaid payment for pharmacist-provided patient care services. This represents an important step toward the sustainable integration of pharmacists into broader healthcare teams. These policy wins were the culmination of years of advocacy by pharmacy professional associations and leaders across the Commonwealth and signal growing recognition of the value that pharmacists bring to improving public health.

At the VCU School of Pharmacy Center for Pharmacy Practice Innovation (CPPI), we have aligned our research efforts with these statewide initiatives, serving as a key partner in their implementation and expansion. In the last year, we published key research findings in leading journals, hosted high-impact seminars featuring national and international experts, and successfully convened state- and nationwide stakeholders to discuss strategies to enhance the uptake of statewide protocols and Medicaid billing in Virginia and across the country. These accomplishments reflect CPPI's ongoing commitment to innovation, collaboration, and leadership in pharmacy practice.

Looking ahead to 2025-26, CPPI is poised to build on this momentum by advancing initiatives that promote innovative care models, expand pharmacist-provided services, and strengthen our influence on pharmacy practice and policy in Virginia. We will focus on disseminating new research findings describing contextual factors affecting the implementation of statewide protocols and services, and strengthen services, and strengthen our influence on pharmacy practice and policy in Virginia. We will focus on disseminating new research findings describing contextual factors affecting the implementation of statewide protocols and Medicaid billing in community-based practice, evaluating the impact of pharmacy deserts on public health of Virginians, and creating a toolkit to assist pharmacists with the Medicaid provider enrollment process.

It is my great honor to serve as Director of CPPI and I cannot wait to share with you our accomplishments of the upcoming year.

These are exciting times for pharmacy in the Commonwealth of Virginia!

With appreciation,

Teresa M. Salgado

Teresa M. Salgado, M.Pharm., Ph.D.
Associate Professor, Department of Pharmacotherapy & Outcomes Science
Director, Center for Pharmacy Practice Innovation, Virginia Commonwealth University School of Pharmacy

FACULTY & STAFF

LEADERSHIP

Teresa Salgado, M.Pharm, Ph.D.
Director

Evan Sisson, Pharm.D.
Assistant Director

CORE FACULTY

John Bucheit, Pharm.D.
Associate Professor

Vasco Pontinha, Ph.D.
Assistant Professor

Dave Dixon, Pharm.D.
Professor & Chair

Sarah Wheeler, Pharm.D.
Assistant Professor

Kelly Goode, Pharm.D.
Professor

Dayanjan Wijesinghe, Ph.D.
Associate Professor

David Holdford, Ph.D.
Professor

AFFILIATE FACULTY

Dana Burns, D.N.P.
Lauren Caldas, Pharm.D.
Alan Dow, M.D.
Sharon Gatewood, Pharm.D.
Resa Jones, Ph.D.
Lauren Pamulapati, Pharm.D.
Mark Ryan, M.D.
Roy Sabo, Ph.D.
Yongyun Shin, Ph.D.
Marie Smith, Pharm.D.
Kristin Zimmerman, Pharm.D.

STAFF

Sydney Weber
Program Support Assistant

Welcome new faculty

Jean Venable ‘Kelly’ Goode, Pharm.D. | Core Faculty

Dr. Goode runs a practice at a federally-qualified health care center for the homeless, Daily Planet Health Services, Inc. She has developed innovative pharmacist care services in a patient-centered medical home and is currently involved in Project IMPACT, an American Pharmacists Association Foundation (APhA) initiative to evaluate the role of pharmacists in continuous glucose monitoring.

She serves as the Director of the PGY1 Community-Based Pharmacy Residency Program at the VCU School of Pharmacy and holds the position of VCU School of Pharmacy Champion for the ACT Collaborative, as the School was recently selected an inaugural ACT Community Pharmacy Center of Excellence. Goode also serves as the APhA liaison representative to the Advisory Committee on Immunization Practices, is a member of the Board of Directors for the National Foundation for Infectious Diseases and is involved in residency training as a member of the American Society of Health-System Pharmacists Commission on Credentialing.

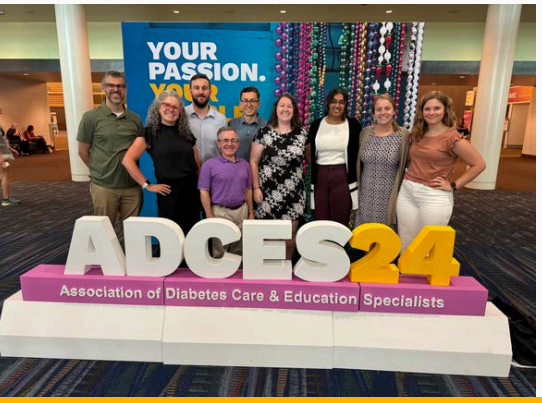
Sarah Wheeler, Pharm.D. | Core Faculty

Dr. Wheeler joined the VCU School of Pharmacy in 2024 and currently practices at VCU Health Hayes E. Willis Family Medicine Clinic. She has extensive experience in both primary care and specialty clinics. She recently published a review of state-based laws and regulations that support pharmacist payment for clinical services as part of the American Colleges of Clinical Pharmacy Advancing Pharmacist Payment Parity Workgroup. Dr. Wheeler is currently evaluating outcomes of implementing pharmacist services in a Rural Health Clinic (RHC) practice setting. She brings a unique perspective and broad experience from working in primary care and specialty clinics across three states and five health systems to the CPPI team.

Marie Smith, Pharm.D. | Affiliate Faculty

Dr. Marie Smith currently focuses her efforts on integrating pharmacists into primary care teams. Additionally, she collaborates with the Connecticut State Office of Health Strategy to expand initiatives that include pharmacists in care teams for the payment of clinical services. Her work highlighting the key role of pharmacists in accountable care organizations (ACOs), Medicaid and medical home teams has received national attention, including several publications in Health Affairs, a leading health policy journal: Pharmacists in ACOs/Integrated Team, CT Medicaid and Pharmacist Medication Management, Pharmacists Belong in Medical Home Teams

Bringing a wealth of knowledge, expertise and passion to the CPPI team, Dr. Smith hopes to expand our collective work to non-pharmacist audiences such as policymakers, providers and employers/payers on a national level.



2024-27 STRATEGIC PLAN

Goal 1: Develop & evaluate innovative care delivery models

Objective 1.1: Work with local health systems to support the implementation of new models.
Objective 1.2: Continuously evaluate engagement with other health system organizations to develop and evaluate innovative care delivery models.

Goal 2: Support uptake & dissemination of statewide protocols

Objective 2.1: Conduct research to inform current uptake of statewide protocols.
Objective 2.2: Create the infrastructure that will allow future monitoring of statewide protocols uptake.
Objective 2.3: Perform a statewide needs assessment of proximity of community pharmacies to the VA population.

Goal 3: Increase pharmacy workforce capacity to provide advanced pharmacy services

Objective 3.1: Equip practicing pharmacists with the knowledge, skills and abilities to engage in advanced pharmacy practice.
Objective 3.2: Equip students with the knowledge, skills and abilities to engage in research.

Goal 4: Advocate for pharmacy services payment

Objective 4.1: Increase the number of pharmacists billing Medicaid for pharmacist services.
Objective 4.2: To provide evidence needed to support payment decisions by payers.
Objective 4.3: Increase the visibility of CPPI in Virginia.

PARTNERS

VCU Health

Bon Secours

HOPE PHARMACY CHURCH HILL

NCPA NATIONAL COMMUNITY PHARMACISTS ASSOCIATION

CROSSTOVER Healthcare Ministry

VDH

Bremo PHARMACY

Small Pharmacy... Big Hearts

BUFORD ROAD PHARMACY

2024-25 IN REVIEW

Aug. | COMPKT Program Launch

Sept. 23 | CPPI Seminar: Community pharmacists in value-based care models with William Doucette, Ph.D.

Nov. 25 | CPPI Seminar: Characterizing pharmacy deserts and designing a model to minimize inequities in pharmacies distribution in Virginia with Joseph Boyle, Ph.D.

July 2024 | Aug. 2024 | Sept. 2024 | Oct. 2024 | Nov. 2024 | Dec. 2024

Aug. 26 | CPPI Seminar: Equitable access to pharmacy services: A geospatial analysis of pharmacy deserts in the United States with Rachel Wittenauer, Ph.D.

Oct. 28 | CPPI Seminar: Navigating the challenges of pharmacogenomics implementation in clinical practice with Elvin Price, Pharm.D., Ph.D.

Nov. 14 | ADA State of Diabetes meeting

Feb. 24 | CPPI Seminar: Intersecting diffusion of innovation theory & implementation science to drive value in payer-pharmacist provider partnerships with Todd Sorensen, Pharm.D.

May 30-31 | NASEM Innovations in Pharmacy Training & Practice to Advance Patient Care Workshop.

Jan 22 | Pharmacy Legislative Day

April 5 | Alumni Weekend Panel Discussion: Implementation of Medicaid Billing for Pharmacist Services in VA

Jan. 2025 | Feb. 2025 | March 2025 | April 2025 | May 2025 | June 2025

Jan 27 | CPPI Seminar: Get PrEPped: Expanding the role of pharmacists in HIV prevention with Anne Masich, Pharm.D. & Dayanjan Wijesinghe, Ph.D.

March 24 | CPPI Seminar: Innovative addiction care models: Expanding pharmacists' roles in patient recovery with Jacqueline Cleary, Pharm.D.

April 28 | CPPI Seminar: Improving collaboration between primary care providers and community pharmacists in Connecticut with Marie Smith Pharm.D.

June 23 | CPPI Seminar: Adaptability and reinvention: A reflection on the versatility of a pharmacist with Rafael Saenz, Pharm.D.

March 7 | Invitational Summit on Medicaid Payment for Pharmacist Clinical Services

May 19 | CPPI Seminar: Evaluating the cost-effectiveness of innovative pharmacist practices: case-study of patients with diabetes in a medication therapy management program with Daniel Touchette, Pharm.D.

FACULTY AWARDS

Dave Dixon, Pharm.D.

- Listed in Stanford Elsevier World's Top 2% Scientists
- Literature Award in Pharmacy Practice Research, ASHP Foundation
- Outstanding Paper of the Year Award, ACCP Ambulatory Care Practice & Research Network
- Outstanding Paper of the Year Award, ACCP Cardiology Practice & Research Network

Kelly Goode, Pharm.D.

- 2025 Kappa Epsilon/Merck Vanguard Leadership Award
- SOP WISDM Professional Achievement Award

Lauren Pamulapati, Pharm.D.

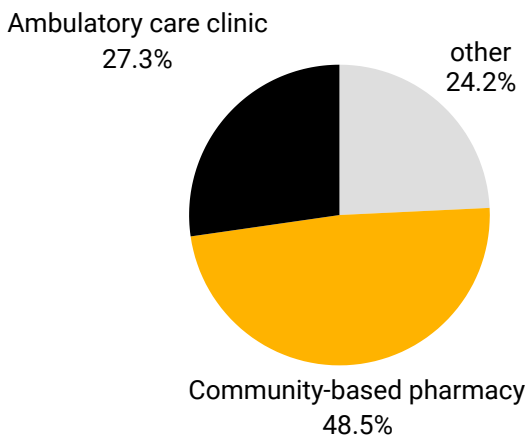
- Board of Pharmacy Specialties Rising Star Award

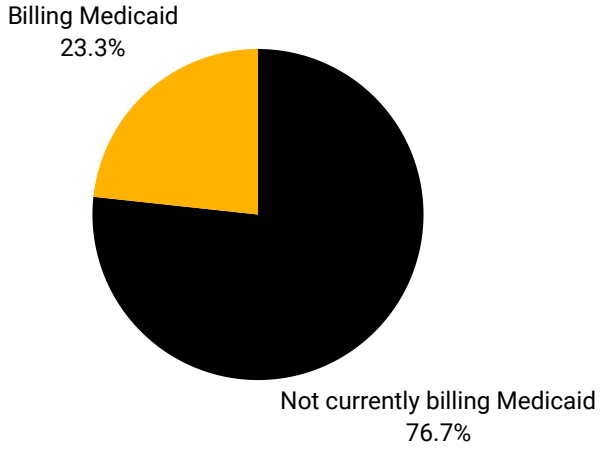
Teresa Salgado, Ph.D.

- Emerging Faculty Scholar Award, VCU School of Pharmacy

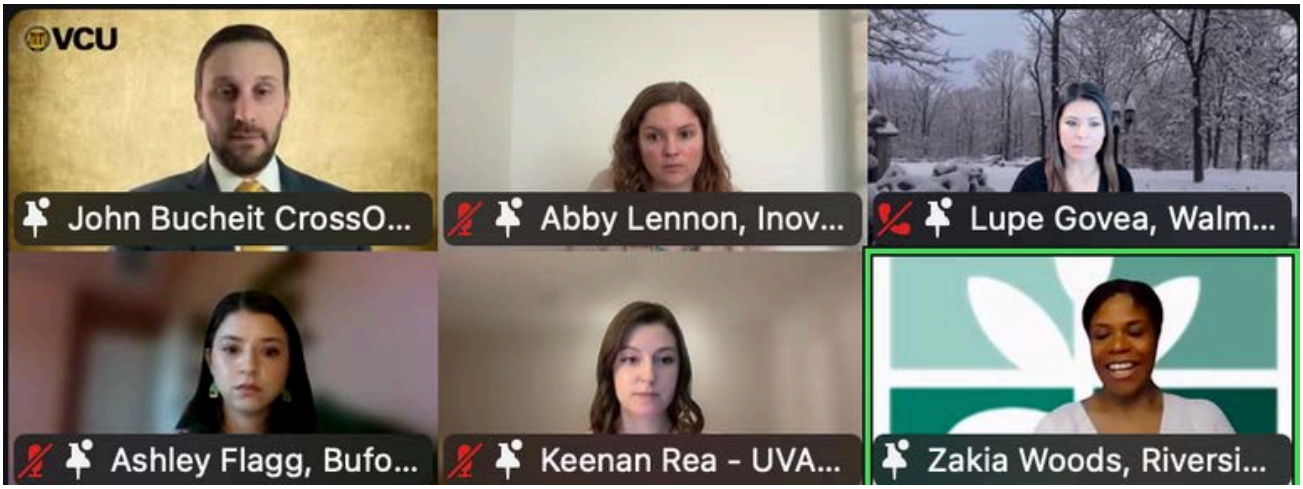
Implementation of Medicaid billing for pharmacist services in Virginia

As part of the Virginia Commonwealth University MCV Alumni Weekend, CPPI hosted a panel of pharmacy leaders to discuss strategies for advancing pharmacist billing practices in Virginia. Moderated by CPPI faculty member John Bucheit, Pharm.D., the session featured insights from practitioners across community- and clinic-based settings, each sharing their experiences with Medicaid billing, credentialing, and service expansion.





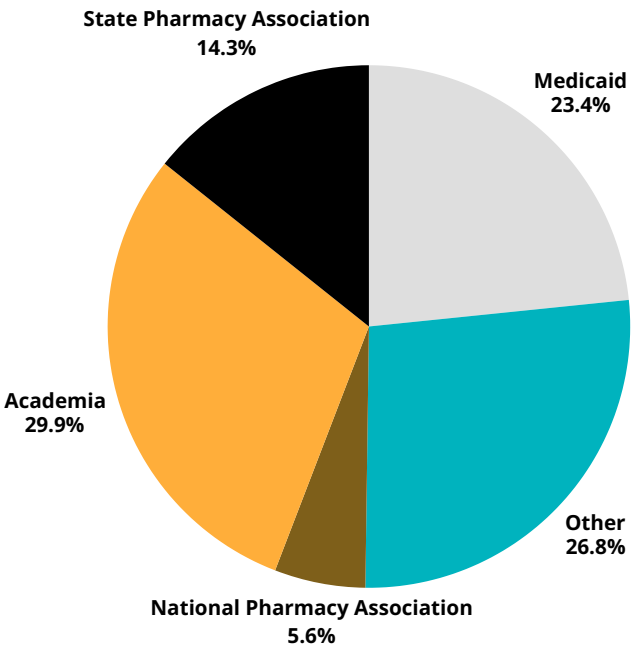
Panelists included Ashley Flagg, Pharm.D. (Buford Road Pharmacy), Lupe Govea, Pharm.D. (Walmart Health & Wellness), Abby Lennon, Pharm.D. (Inova Bariatrics), Zakia Woods, Pharm.D. (Riverside Health System), and Keenan Rea, Pharm.D. (UVA Physicians Group). Panelists shared how they are implementing Medicaid billing, the credentialing process, overcoming barriers, and resources that they have found helpful.



CPPI summit brings together experts on Medicaid billing from across the U.S.

The VCU School of Pharmacy Center for Pharmacy Practice Innovation (CPPI) and the University of Connecticut School of Pharmacy held a joint invitational Summit on State Medicaid Payment for Pharmacist Clinical Services that took place in March 2025. The virtual event hosted Medicaid administrators from across the country, state- and national-level pharmacy leaders, academia partners and other stakeholders interested in pharmacy practice transformation to promote a productive discussion around the dissemination of best practices for sustainable pharmacist clinical services for Medicaid beneficiaries.

Individuals registered for Summit by setting



Individuals registered for the summit by state

Speakers and Panelists:

Krystalyn Weaver, Pharm.D. | National Alliance of State Pharmacy Associations (NASPA)
Alex Adams, Pharm.D. | Idaho Department of Health and Welfare
Melissa McGivney, Pharm.D. | University of Pittsburgh School of Pharmacy
Kari Trapskin, Pharm.D. | Pharmacy Society of Wisconsin
Howard P. Estes, J.D. | Virginia Pharmacy Association
Marie Smith, Pharm.D. | University of Connecticut School of Pharmacy
Stuart Beatty, Pharm.D. | Ohio Northern University
Amanda Brummel, Pharm.D. | Fairview Health Services in Minnesota
Matt Osterhaus, B.S. Pharm. | Osterhaus Pharmacy in Iowa
Jenny Arnold, Pharm.D. | Washington State Pharmacy Association
Kelly Goode, Pharm.D. | Virginia Pharmacist Association
Gina Moore, Pharm.D. | Colorado Pharmacists Society
Anne Burns, B.S. Pharm. | Pharmacy Horizons, LLC
JoeMichael Fusco, Pharm.D. | Department of Medical Assistance Services in Virginia
Molly Ashe Scott, Pharm.D. | UNC Eshelman School of Pharmacy
Susan Bonilla (CEO) | California Pharmacists Association

The organizing committee – Teresa Salgado, Ph.D., Evan Sisson, Pharm.D., John Bucheit, Pharm.D., Dave Dixon, Pharm.D., Kelly Goode, Pharm.D., Sydney Weber and Marie Smith, Pharm.D. (UConn School of Pharmacy) – plans to publish a summary of the summit in the coming months and will keep you updated on its availability.

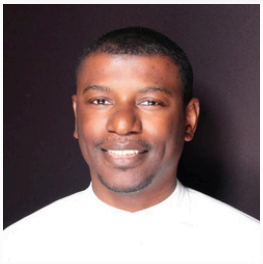
CPPI Seminars

August 2024

Equitable access to pharmacy services: A geospatial analysis of pharmacy deserts in the United States with Rachel Wittenauer, Ph.D. from the Comparative Health Outcomes, Policy, and Economics (CHOICE) Institute at the University of Washington

September 2024

Community pharmacists in value-based care models with William Doucette, Ph.D. from the University of Iowa College of Pharmacy



October 2024

Navigating the challenges of pharmacogenomics implementation in clinical practice with Elvin Price, Pharm.D., Ph.D. from the VCU School of Pharmacy

November 2024

Characterizing pharmacy deserts and designing a model to minimize inequities in pharmacies distribution in Virginia with Joseph Boyle, Ph.D., T32 postdoctoral fellow in cancer prevention and control at Massey Cancer Center

January 2025

Get PrEPped: Expanding the role of pharmacists in HIV prevention with Anne Masich, Pharm.D. and Dayanjan Wijesinghe, Ph.D. from VCU School of Pharmacy

February 2025

Intersecting diffusion of innovation theory and implementation science to drive value in payer-pharmacist provider partnerships with Todd Sorensen, Pharm.D. from University of Minnesota College of Pharmacy

March 2025

Innovative addiction care models: Expanding pharmacists' roles in patient recovery with Jacqueline Cleary, Pharm.D. from Albany College of Pharmacy & Health Sciences

April 2025

Improving collaboration between primary care providers & community pharmacists in Connecticut with Marie Smith, Pharm.D. the University of Connecticut School of Pharmacy

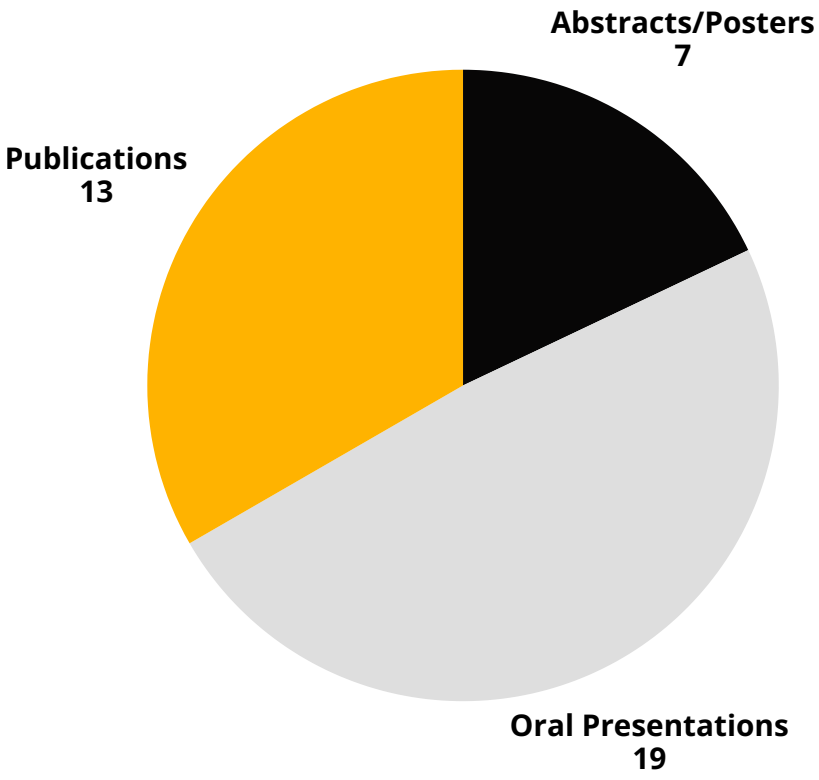
May 2025

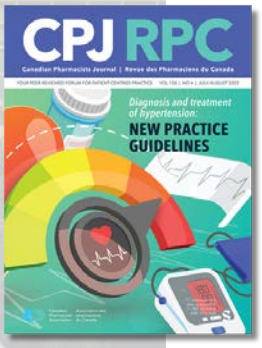
Evaluating the cost-effectiveness of innovative pharmacist practices with Daniel Touchette, Pharm.D. from the Retzky College of Pharmacy - Chicago

June 2025

Adaptability and reinvention: A reflection on the versatility of a pharmacist with Rafael Saenz, Pharm.D. from the National Hispanic Medical Association

RESEARCH PUBLICATIONS

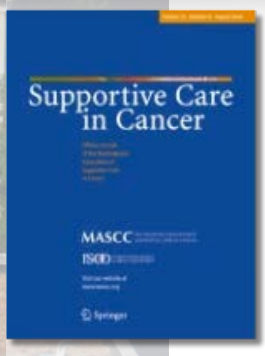




Accessibility reality check

Can Pharm J (Ott). 2024;10;157(4):155-160

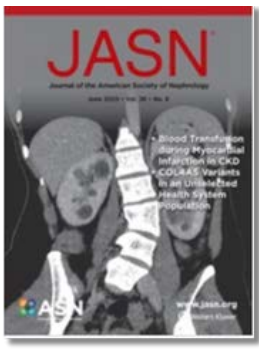
Dave Dixon served as an author.



Optimal hyperglycemia thresholds in patients undergoing chemotherapy: A cross sectional study of oncologists' practices

Support Care Cancer. 2024;32(8):563

Teresa Salgado served as first author.



Frailty and prehabilitation: Navigating the road to a successful transplant

J Am Soc Nephrol. 2024;35(11):1607-1609

Vasco Pontinha served as an author.

Modeling incremental benefit of medication reconciliation on ICU outcomes

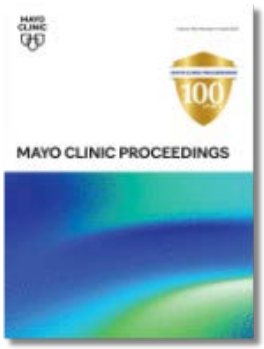
Jt Comm J Qual Patient Saf. 2025;51(6):398-404

Teresa Salgado served as an author.

Impact of Glucagon-like Peptide-1 receptor agonists on metabolic health in liver transplant recipients

Transplantation. 2025

Vasco Pontinha served as an author.



Prescribing patterns of SGLT2 inhibitors and GLP-1 receptor agonists in patients with Type 2 Diabetes at cardiology, endocrinology, and primary care visits

Mayo Clin Proc. 2025;100(4):647-656

Dave Dixon (first author) and Teresa Salgado served as authors.

Tolerance for chemotherapy-induced peripheral neuropathy among women with metastatic breast cancer: a discrete-choice experiment

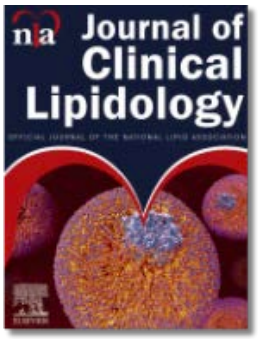
Breast Cancer Res Treat. 2025;212(1):149-159

Rotana M. Radwan (CPPI Student) and Teresa M. Salgado (corresponding author) served as authors.

Health technology assessment with dynamic prevalence of disease over time

Available at SSRN

Vasco Pontinha served as an author.



Multidisciplinary teams in clinical lipidology and cardiometabolic care: A national lipid association expert clinical review

J Clin Lipidol. 2025;S1933-2874(25)00283-1

Dave Dixon served as an author.

Impact of pharmacist-physician collaborative care on diabetes quality measure achievement in primary care

J Manag Care Spec Pharm. 2025;31(6):565-577

Tyler Wagner (CPPI Student), Dave Dixon and Teresa Salgado served as authors.

Investigating the time-varying nature of medication adherence predictors: An experimental approach using Andersen's Behavioral Model of Health Services Use

Pharmacy (Basel). 2025;13(2):53

Vasco Pontinha (first author), Dave Dixon and David Holdford served as authors.

Characterizing pharmacy deserts and designing a model to minimize inequities in pharmacy distribution in Virginia

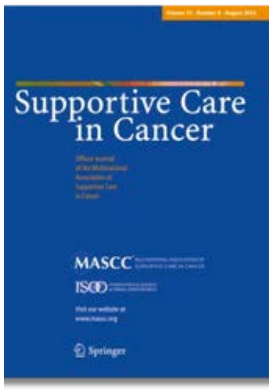
J Am Pharm Assoc (2003). 2025;65(2):102334

John Bucheit, Evan Sisson, Kelly Jean Venable Goode, Sharon Gatewood and Teresa Salgado served as authors.

The case for value-based care in kidney transplantation: Insights into geography, growth, and financial models

Curr Opin Organ Transplant. 2025;30(2):87-95

Vasco Pontinha served as an author.



Factors influencing the decision to discontinue treatment due to chemotherapy-induced peripheral neuropathy among patients with metastatic breast cancer: A best-worst scaling

Support Care Cancer. 2025;33(6):467

Rotana M. Radwan (CPPI Student) and Teresa M. Salgado served as authors.

Researchers identified 44 locations in Virginia where adding pharmacy services could benefit more than 10,000 residents

By Mary Kate Brogan
VCU School of Pharmacy

The addition of pharmacy services at 44 locations throughout Virginia could reduce the impact of pharmacy deserts for thousands of Virginians in each area, according to a study published today in the Journal of the American Pharmacists Association by researchers from Virginia Commonwealth University and the Virginia Board of Pharmacy.

Similar to food deserts, where residents have limited access to healthy and affordable food, pharmacy deserts leave residents with limited access to the medications, education and primary care services that pharmacists can provide. And the number of pharmacy deserts is growing.

In Virginia, data from the Board of Pharmacy revealed that the number of pharmacies decreased by about 6% between June 2016 and May 2024, mirroring a recent national analysis that identified a 5.4% decrease in pharmacy rates from 2018 to 2021.

Pharmacy closures have unseen ripple effects for public health among residents in those areas, according to the paper's corresponding author Teresa M. Salgado, Ph.D., director of the Center for Pharmacy Practice Innovation at the VCU School of Pharmacy.

"It's not just the ability to provide life-saving medications that goes away," Salgado said. "First of all, there's the loss of access to apharmacist, to a health professional who provides care in areas where there may be limited access to other health care providers. Frankly, community-based pharmacies are the front door to health care and the hub and vitality of these communities."

In addition to providing life-saving medications and medication counseling, pharmacists provide other health and wellness services, including vaccinations, tobacco cessation, point-of-care tests and treatment of urinary tract infections, influenza, strep throat and COVID-19, evaluation and dispensing of oral contraceptives, naloxone, epinephrine and pre- and post-exposure prophylaxis (PrEP and PEP) for HIV prevention, Salgado added.

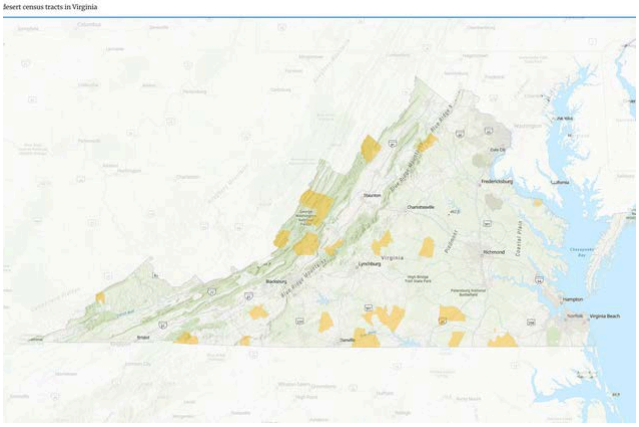
"All of these services have been approved as statewide protocols by the Virginia Board of Pharmacy and the legislature. These vital services – the essential public health role of the pharmacist – go away when a pharmacy disappears in the community," she said.

In the study, "Characterizing Pharmacy Deserts and Designing a Model to Minimize Inequities in Pharmacy Distribution in Virginia," researchers identified 51 census tracts in Virginia that qualified as pharmacy deserts – census tracts that had low access to pharmacies and were home to mostly low-income residents. Compared with non-deserts, pharmacy desert tracts had a significantly lower percentage of residents under 18 years old, a greater percentage of Black residents, a greater percentage of residents who were uninsured or on Medicaid or Medicare, a greater percentage of residents living in poverty and a lower median household income. These findings, Salgado said, are in line with national data.

> **"Sometimes we take things like getting a flu shot at the pharmacy for granted, and it's not until they go away that we realize, 'Wow, we no longer have access.' And usually it's the same at-risk populations who have the hardest time accessing health care and who will suffer the consequences of pharmacies closing.**
>
> **–Teresa Salgado, Ph.D.**

"Sometimes we take things like getting a flu shot at the pharmacy for granted, and it's not until they go away that we realize, 'Wow, we no longer have access.' And usually it's the same at-risk populations who have the hardest time accessing health care and who will suffer the consequences of pharmacies closing," Salgado said

Of the 2,198 census tracts in Virginia, urban census tracts were more frequently pharmacy deserts (5.5% of tracts) than rural (2.9%) and suburban (0.1%), researchers found. Specifically, seven tracts in Norfolk, five tracts in Richmond, four tracts in Halifax County (home to South Boston), and three tracts in both Newport News and Chesapeake were considered pharmacy deserts.



"Halifax County and Hampton Roads are areas where we could place additional pharmacies and see a big impact," Salgado said.

The researchers performed a geospatial analysis, running 10,000 simulation iterations, and identified 44 primarily urban locations where adding pharmacy services could significantly improve access and decrease pharmacy deserts. Each of the 44 locations was identified for its ability to prevent pharmacy desert status for at least 10,000 residents. In some cases where simulated locations were close together, multiple locations identified could benefit the same resident; in other cases, a single location could serve well over 10,000 residents. For example, adding one location for pharmacy services in Chesapeake prevented over 15,000 residents and four census tracts from pharmacy desert status in several of the iterations.

"More so than identifying pharmacy deserts in the commonwealth, this simulation used objective criteria to identify priority areas where providing access to a pharmacy would benefit the greatest number of residents. This study produced concrete and actionable recommendations to guide future decisions and next steps in addressing the pharmacy deserts issue," Salgado said. "This is what sets this study apart from other studies of pharmacy deserts at the national and state levels."

Not all solutions might look like a new

pharmacy, said Salgado, who also serves as an associate professor in VCU's Department of Pharmacotherapy and Outcomes Science.

"Is a brick-and-mortar pharmacy needed, or could a mobile unit, for example, be deployed to those areas to address health care needs? We would have to go and talk to the communities and understand what would be viable from a financial standpoint and what would better address the population's needs," Salgado said.

The team of researchers who contributed to this study includes first author Joseph Boyle, Ph.D., a postdoctoral fellow at VCU Massey Comprehensive Cancer Center who earned a Ph.D. in biostatistics from the VCU School of Medicine in 2023, and co-authors Rachel Wittenauer, Ph.D., of the University of Washington; Shreya Ramella, an MPH candidate at New York University who earned a B.S. in bioinformatics from VCU in 2023; and Caroline Juran, executive director of the Virginia Board of Pharmacy, along with Salgado's VCU School of Pharmacy colleagues at the Center for Pharmacy Practice and Innovation and in the Department of Pharmacotherapy and Outcomes Science: John D. Bucheit, Pharm.D., associate professor; Evan M. Sisson, Pharm.D., professor; Jean-Venable "Kelly" Goode, Pharm.D., professor; and Sharon S. Gatewood, Pharm.D., associate professor.

Media Appreances

2/10/25 | 13NewsNow
Pharmacy deserts are impacting thousands in Hampton Roads, study finds

2/11/25 | Wavy.com
VCU researchers identify 44 locations where adding pharmacies could benefit thousands of Virginia residents

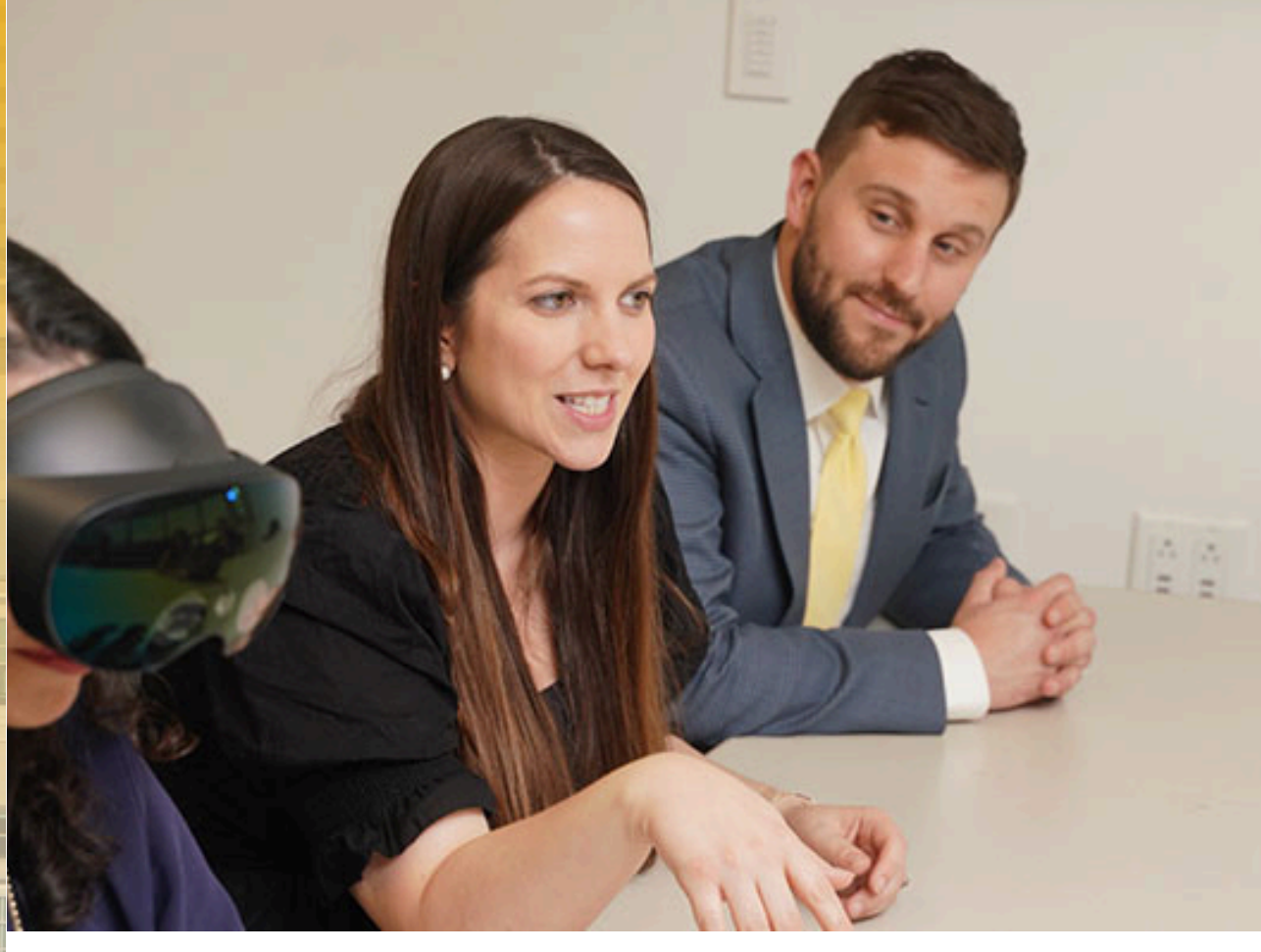
2/11/25 | ABC8 News
VCU researchers identify 44 locations where adding pharmacies could benefit thousands of Virginia residents

2/22/25 | The Virginian Post
Virginia legislators pass bill to reduce pharmacy deserts

2/23/25 | CBS6 News
These 'highly vulnerable' Richmond neighborhoods are now pharmacy deserts

2/24/25 | ABC8 News
These 'highly vulnerable' Richmond neighborhoods are now pharmacy deserts

3/6/25 | Virginia Public Radio
As pharmacies close, whole communities lose service



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