

# Diabetes and Hypertension Project ECHO\* Clinic

\*ECHO: Extension of Community Healthcare Outcomes

**April 14, 2022**

## Before we begin:

- Rename your Zoom screen with your name and organization
- Claim CE: text 25393-25389 to 804-625-4041
  - Go to [vcuhealth.org/echodmhtn](https://vcuhealth.org/echodmhtn) for instructions on creating your account

*The Diabetes and Hypertension ECHO is made possible  
by funding through CDC Cooperative Agreement  
NU58DP006620-InnoVAte.*

# Zoom Reminders



## Diabetes & Hypertension Project Echo

- You are all on **mute**. Please **unmute** to talk.
- If joining by telephone audio only, press **\*6** to mute and unmute.
- Use the chat function to speak with our team or ask questions.

Unmute

Chat Box



Leave Meeting

# ECHO is all teach, all learn

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Interactive



Co-management  
of cases



Peer-to-peer  
learning



Collaborative  
problem solving

## Helpful Reminders

- Please feel free to eat your lunch or step away briefly if needed
- We are recording and can share sessions upon request
  - Each session's slides are available on [www.vcuhealth.org/echodmhtn](http://www.vcuhealth.org/echodmhtn)
- Please **do not share any protected health information** in your discussion or the chat box
- Project ECHO operates on the “All Teach, All Learn” model
  - Feel free to ask questions in the chat or unmute to ask questions at designated times
  - We're all here to learn from each other and value each person's input and expertise!



# VCU Health Diabetes & Hypertension ECHO Clinics

## VCU Hub Team

Principal Investigator	Dave Dixon, PharmD
Administrative Medical Director ECHO Hub	Vimal Mishra, MD, MMCi
Clinical Experts	Niraj Kothari, MD Trang Le, MD
Project Coordinator/IT Support	Madeleine Wagner

- One-hour ECHO clinics on 2nd Thursdays
- Every ECHO clinic includes a didactic presentation followed by case discussions
- Website: [www.vcuhealth.org/echodmhtn](http://www.vcuhealth.org/echodmhtn)
  - Directions for claiming CE can be found here
  - You have up to six days after our session to claim CE by texting **25393-25389** to **804-625-4041**

# Disclosures

Trang Le, M.D., has no financial conflicts of interest to disclose.

Niraj Kothari, M.D., has no financial conflicts of interest to disclose.

There is no commercial or in-kind support for this activity.

# Kidney Nutrition

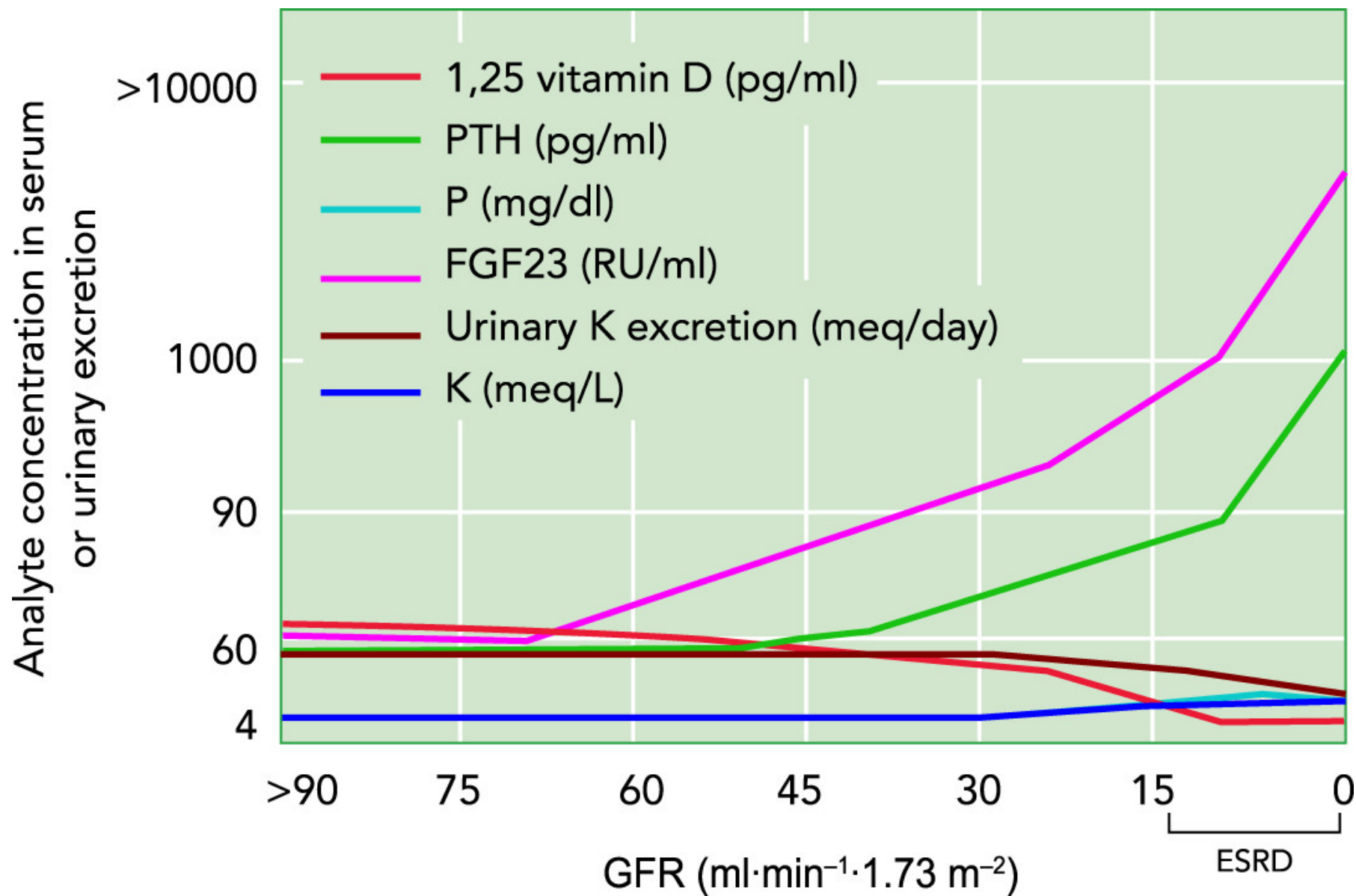
# Learning objectives

- Understand the need for dietary restrictions of sodium, potassium, phosphorus, and protein in patients with chronic kidney disease
- Recall modifications to diet that may be necessary in patients on dialysis
- Understand the different requirements for dietary modification in patients on peritoneal dialysis

# Major considerations

- eGFR: patients with eGFR > 60mL/min/1.73m<sup>2</sup> should not have any dietary alteration
  - Most CKD patients are well served by the DASH diet
  - Dialysis patients have different needs
  - Peritoneal dialysis patients have different needs than hemodialysis patients
- Sodium
- Potassium
- Phosphorus
- Protein





# Sodium

- Both KDIGO and KDOQI guidelines recommend restriction of sodium intake in CKD patients, to less than 90-100mmol/d (2-2.3g sodium or ~5g NaCl)
- This is difficult!

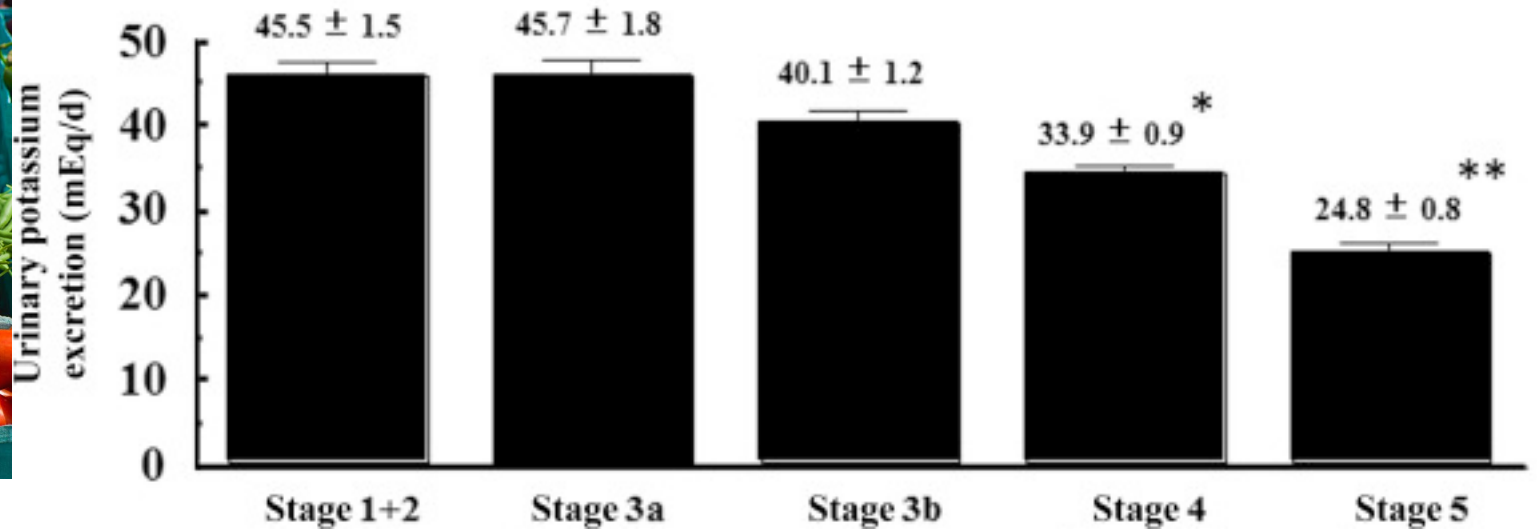


# Potassium

- Generally well preserved excretion until advanced CKD
- Caution in patients on RAASi or spironolactone/eplerenone



A





# Phosphorus

- Excretion generally well preserved with  $GFR > 45\text{mL/min/1.73m}^2$
- Organic vs. inorganic phosphate
  - Inorganic phosphate is absorbed more readily



## MEATS HIGH IN PHOSPHORUS

Pre-packaged or breaded meats and fish  
Deli meats  
Hot dogs  
Processed meats



## GRAINS HIGH IN PHOSPHORUS

Biscuits  
Muffins  
Corn bread  
Pancakes  
Waffles



## MISCELLANEOUS FOODS HIGH IN PHOSPHORUS

Fast food  
Hamburger helper mixes  
Pizza  
Snack cakes  
Toaster pastries



## DAIRY PRODUCTS HIGH IN PHOSPHORUS

Processed cheeses  
Cheese sauces  
Ice cream  
Milk  
Pudding  
Frozen yogurt



## FLUIDS HIGH IN PHOSPHORUS

Beer  
Hot cocoa  
Canned soup  
Some carbonated beverages, flavored waters and teas  
Milk  
Milkshakes  
Some protein shakes

# Protein

- Generally acceptable to restrict protein intake to ~0.8g/kg body weight/day in patients with CKD
- Nephrotic syndrome patients may be better served with normal protein intake

**3.1.13: We suggest lowering protein intake to 0.8 g/kg/day in adults with diabetes (2C) or without diabetes (2B) and GFR <30 ml/min/ 1.73 m<sup>2</sup> (GFR categories G4-G5), with appropriate education.**

**3.1.14: We suggest avoiding high protein intake (>1.3 g/kg/day) in adults with CKD at risk of progression. (2C)**

KDIGO

3.0.1 In adults with CKD 3-5 who are metabolically stable, we recommend, under close clinical supervision, protein restriction with or without keto acid analogs, to reduce risk for end-stage kidney disease (ESKD)/death (1A) and improve quality of life (QoL) (2C):

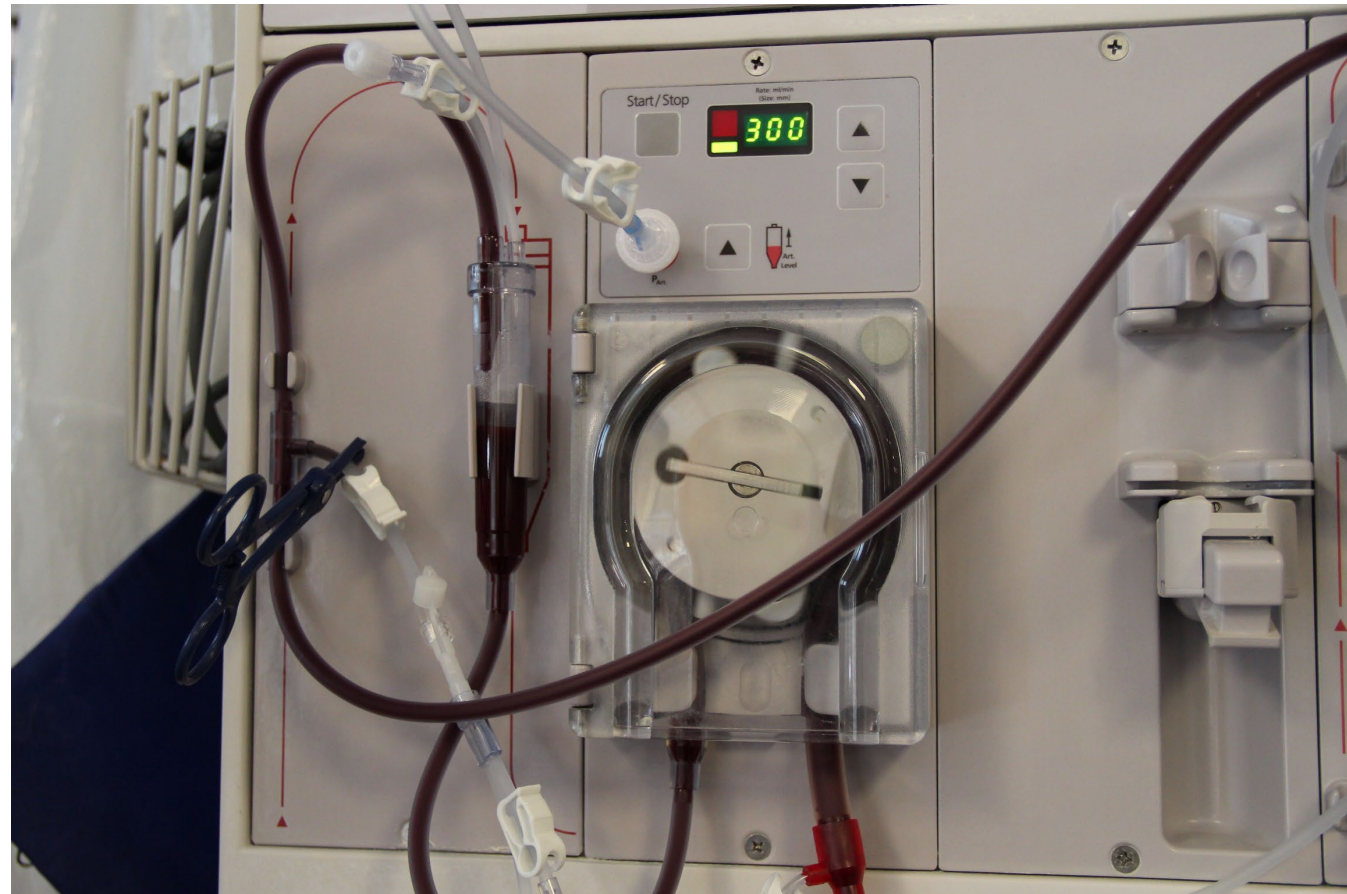
- a low-protein diet providing 0.55–0.60 g dietary protein/kg body weight/day, or
- a very low-protein diet providing 0.28–0.43 g dietary protein/kg body weight/day with additional keto acid/amino acid analogs to meet protein requirements (0.55–0.60 g /kg body weight/day)

KDOQI



# What about dialysis patients?

- Substantially greater need for restrictions
  - Sodium
  - Potassium
  - Phosphorus



# What about peritoneal dialysis patients?

- Generally higher protein requirements, ~1.2g/kg/day
- Sometimes issues with suppressed appetite due to physical sensation of fullness from indwelling fluid, and/or hyperglycemia caused by the dialysate
- Often looser restrictions for phosphorus intake

# Summary

- Many chronic kidney disease patients do not require dietary restrictions beyond sodium restriction—restriction of other compounds such as potassium, phosphorus, and protein may actually be harmful if misapplied
- Patients with severe chronic kidney disease may require dietary modification—these should be implemented in consultation with a nephrologist and/or dietitian
- Dialysis patients, particularly peritoneal dialysis patients, may have different requirements



# Questions?



# Kidney Nutrition Cases

Peace Johnson, MD, Nephrology Fellow

CC: ckd follow up

61 yo man with pmh of CKD3, HTN, CAD  
Issues with intermittent hyperkalemia

Medications: Losartan, Amlodipine, Atorvastatin

Denies NSAID use

LABS: K 5.3, cr 2.0 (baseline), CO2 23,

## Next steps?

- Medication review: Losartan (need to decrease), could start potassium binder or a diuretic.

- Constipation?

- Diet?

- High Potassium
- -potatoes
- -Legumes
- -Juices: orange, prune
- -Seafood: tuna, salmon, snapper
- -Leafy greens: spinach
- -Dairy
- -Tomatoes
- -Banana
- -Avocado
- -etc.....

- Patient resources
- -AAKP, independent kidney patient organization. May 1st hyperkalemia awareness day
- -Up-to-date pamphlets
- -low K diet is between 2000mg to 3000mg /day.

- CC: ckd f/u

- 55yo woman with CKD 5 (not on dialysis), poorly controlled HTN, DM

Medications: Hydralazine, Imdur, Nifedipine,

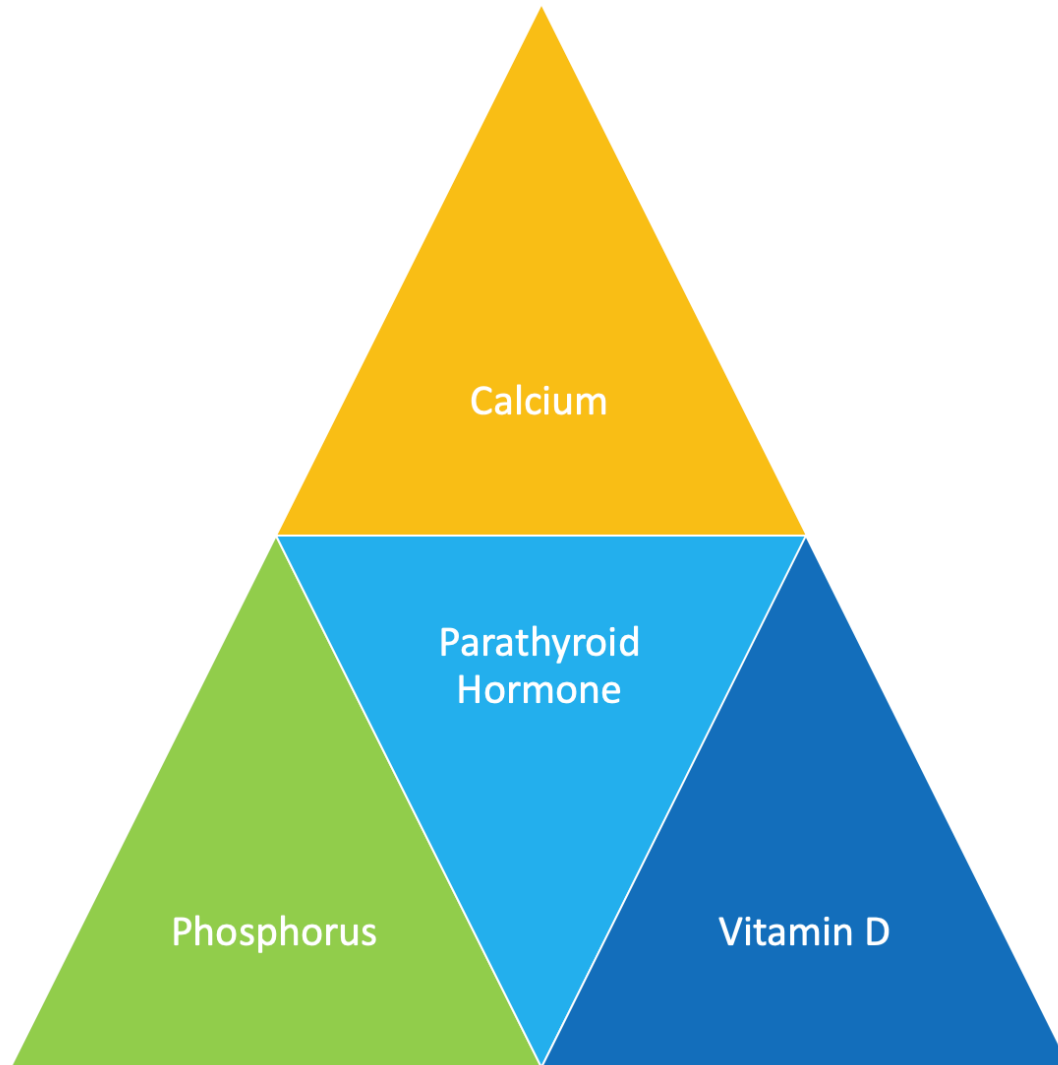
Labs

Cr 5mg/dl, egfr 8 (baseline)

Phos 5.9, PTH 200, vitamin d and calcium wnl.

**-Next steps: dietary modification**

- Bone Health in CKD  
(aakp.org)



- -high phosphorous can lead to hardening of blood vessels, increased cardiovascular risk

- High Phosphorous food:
- Dairy foods
- Beans
- Lentils
- Nuts
- Bran cereals
- Oatmeal
- Colas and other drinks with phosphate additives
- Processed Meats
- ...etc
- \*Phosphorus found in animal foods is absorbed more easily than phosphorus found in plant foods.

- How to lower phosphorous in diet:
- -un-process diet: a lot of phos is added in processed food
- -use resources like kidney.org: list high phosphorous foods to minimize and shows alternatives



# Case Studies

- Anyone can submit cases: [www.vcuhealth.org/echodmhtn](http://www.vcuhealth.org/echodmhtn)
- Receive feedback from participants and content experts
- Earn **\$150** for submitting and presenting

# Provide Feedback

[www.vcuhealth.org/echodmhtn](http://www.vcuhealth.org/echodmhtn)

- Feedback
  - Overall feedback related to session content and flow?
  - Ideas for guest speakers?

# Access Your Evaluation

vcuhealth.org/services/telehealth/for-providers/education/diabetes-and-hypertension-project-echo



## For Providers

Education -

**Diabetes and Hypertension Project ECHO -**

Our Team

Curriculum

Claiming CE Credit

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VCU Nursing Home ECHO +

VCU Health Palliative Care ECHO +

Virginia Opioid Addiction ECHO +

Virginia Sickle Cell Disease ECHO +

# Diabetes and Hypertension Project ECHO

Welcome to the Diabetes and Hypertension Extension for Community Health Outcomes or ECHO, a virtual network of multidisciplinary diabetes and hypertension experts. An ECHO model connects professionals with each other in real-time collaborative virtual sessions on Zoom. Participants present de-identified cases to one another, share resources, connect to each other, and grow in their expertise. This ECHO will address practice level issues and solutions related to managing complex patients with difficult to control diabetes and hypertension. [Register now for an ECHO Session!](#)

## Network, Participate and Present

- Engage in a collaborative community with your peers.
- Listen, learn and discuss informational and case presentations in real-time.
- Take the opportunity to [submit your de-identified case study](#) for feedback from a team of specialists for diabetes and hypertension.
- [Provide valuable feedback.](#)
- Claim CE credit by [texting in attendance](#).

## Benefits



# VCU Diabetes & Hypertension Project ECHO Clinics

2<sup>nd</sup> Thursdays — 12 p.m. to 1 p.m.

## Mark Your Calendars — Upcoming Sessions

- **May 12: Lightning Round**
  - New onset diabetes/severe hypoglycemia in the office
  - Hypertensive urgency in the office
  - Hypoglycemia unawareness

**June 9: Which Diet is Best for My Diabetic Patient?**

Please register at [www.vcuhealth.org/echodmhtn](http://www.vcuhealth.org/echodmhtn)

Thank you for coming!



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