

# Diabetes and Hypertension Project ECHO\* Clinic

\*ECHO: Extension of Community Healthcare Outcomes

**March 25, 2021**

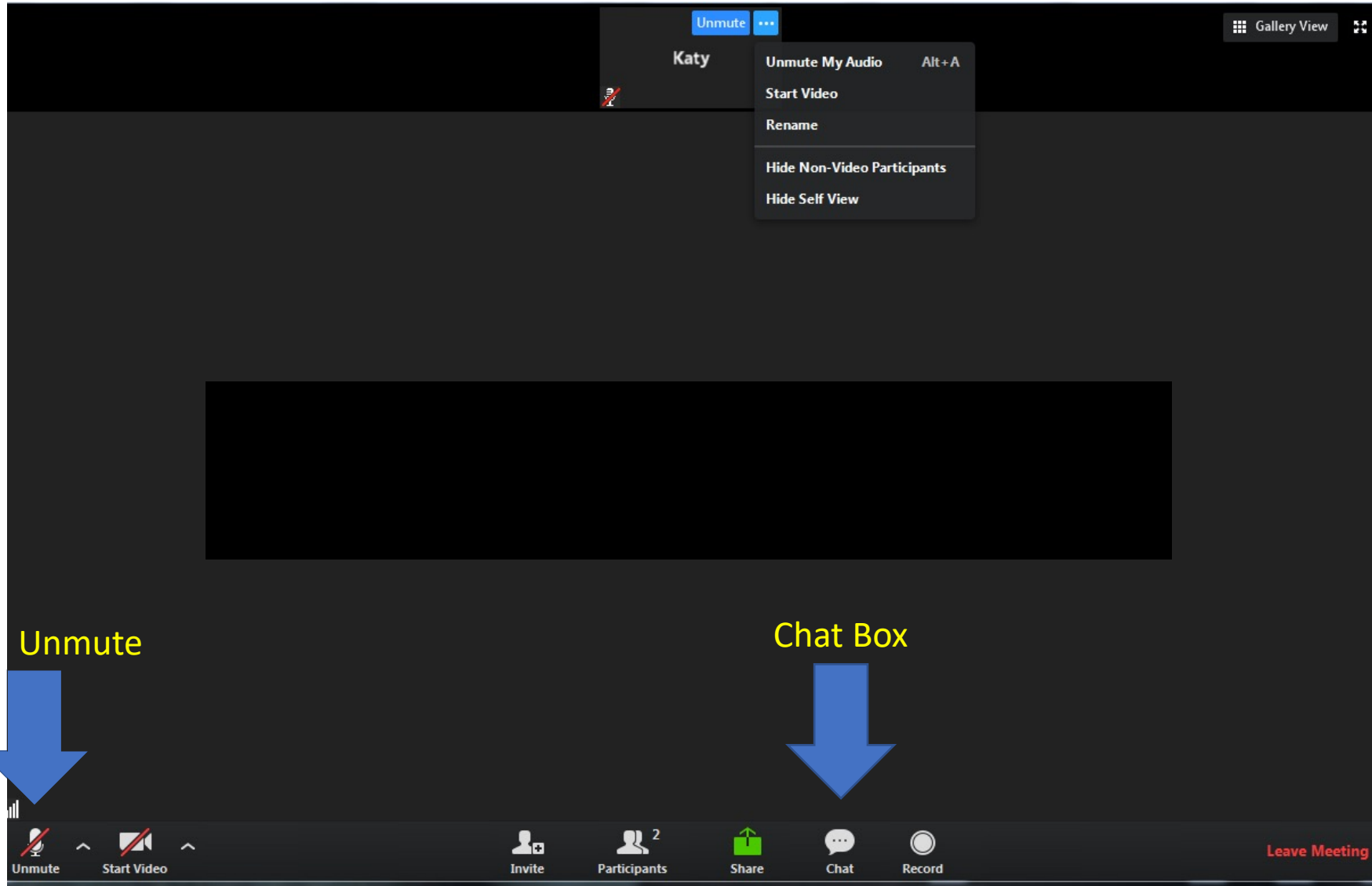
## Before we begin:

- Rename your Zoom screen with your name and organization
- Claim CE: text 19155-18817 to 804-625-4041
  - Go to [vcuhealth.org/echodmhtn](https://vcuhealth.org/echodmhtn) for instructions on creating your account

It's International Waffle Day!  
Be thinking of your favorite  
waffle topping to share during  
introductions!



# Helpful Reminders



- 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

# ECHO is all teach, all learn



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)
  - We encourage you to keep your camera on, but if you are uncomfortable being recorded, feel free to turn it off
- Please **do not share any protected health information** in your discussion or the chat
- 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

- Bimonthly, 1.5-hour tele-ECHO clinics on 2nd and 4th Thursdays
- Every tele-ECHO clinic includes a 30-minute didactic presentation followed by case discussions
- Didactic presentations are developed and delivered by interprofessional experts
- Website: [www.vcuhealth.org/echodmhtn](http://www.vcuhealth.org/echodmhtn)
  - Directions for creating an account and claiming CE can be found here also
  - You have up to six days after our session to claim CE by texting **19155-18817** to **804-625-4041**

# Hub and Participant Introductions



## VCU 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, BA

- Use **chat** function for introduction
  - Name
  - Organization

Reminder: **Mute** and **unmute** screen to talk or press **\*6** for phone audio

Share your name, organization, and favorite waffle topping!

# Disclosures

Trang Le, MD has no financial conflicts of interest to disclose.  
Niraj Kothari, MD has no financial conflicts of interest to disclose.  
There is no commercial or in-kind support for this activity.

# Hypertension in Pregnancy

# Learning Objectives

- Understand the differences between chronic HTN, gestational HTN, and pre-eclampsia
- Describe typical management of HTN in pregnancy
- Recall the initial evaluation for pre-eclampsia in hypertensive pregnant patients
- Describe a typical approach to postpartum HTN management



# HTN in pregnancy

- 6-8% of pregnancies among women aged 20-44
- Associated with preeclampsia, eclampsia, stroke, placental abruption, preterm delivery, low birth weight

# Pregnancy-associated HTN disorders

- Chronic hypertension
- Gestational hypertension
- Pre-eclampsia

# Chronic hypertension in pregnancy

- HTN prior to pregnancy
- HTN present on at least two occasions before 20 wks gestation
- HTN persisting longer than 12 weeks postpartum
- Affects 0.6-1.5% of pregnant women in the US
- Prevalence in Black patients is twice that of White patients
- Most data is for what is now called stage 2 HTN (BP > 140/90mmHg)

# Gestational hypertension

- HTN (BP > 140/90) without proteinuria/pre-eclamptic features after 20 weeks gestation
- Usually resolves by 12 weeks postpartum
  - If not, chronic HTN
- Provisional diagnosis -> transient HTN of pregnancy

# Pre-eclampsia

- 15-20% of hypertensive pregnant patients will progress to pre-eclampsia
- New onset BP > 140/90mmHg on at least two occasions after 20 weeks gestation or BP > 160/110 on multiple occasions within the same office visit AND:
  - Proteinuria > 300mg/day (can use 1+ protein on urine dipstick)
  - Thrombocytopenia < 100k
  - Cr > 1.1 or doubling vs. baseline
  - AST/ALT twice normal
    - Can also see persistent RUQ/epigastric pain
  - Pulmonary edema
  - Persistent cerebral/visual symptoms

# What to avoid

- RAAS blockers
  - Renal dysgenesis
  - Fetal growth restrictions
  - Oligohydramnios
- Diuretics
  - Oligohydramnios
  - MRAs such as spironolactone also have anti-androgenic effects
- Nitroprusside
  - Fetal cyanide toxicity

# Treatment of HTN (gestational/chronic)

- Methyldopa
- Labetalol
- Long acting CCB (i.e. extended-release nifedipine)
- ACOG: treat BP > 160/105 in chronic HTN, > 160/110 in preeclampsia
  - Goal BP in chronic HTN: 120-160/80-105
  - No target in preeclampsia

# Pre-eclampsia screening/treatment

- Check urinary protein excretion (24 hr sample preferred)
- Check AST/ALT
- Check CBC with Plt count
- Check creatinine
- Assess for new HA/visual disturbances, epigastric/RUQ pain, pulmonary edema
- HTN management as detailed previously
- Definitive tx of preeclampsia: delivery
  - Severe preeclampsia (BP >160/110 + thrombocytopenia, renal dysfunction, liver dysfunction, pulmonary edema, cerebral or visual symptoms): consider delivery (regardless of gestational age) vs MgSO<sub>4</sub>



# Postpartum HTN management

- B-blockers: propranolol, metoprolol, labetalol
  - Avoid atenolol
- CCBs: nifedipine, verapamil, diltiazem
- ACEi: generally low transfer into milk however may cause infant hypotension/oliguria/seizures—assess infant prior to use
  - Insufficient data re: ARBs
- Diuretics: HCTZ < 50mg thought to be safe
  - Insufficient data re: furosemide
- Hydralazine
- ACOG: avoid methyldopa in postpartum women
  - May increase risk of postpartum depression
- Goal BP < 140/90mmHg if initiating treatment postpartum

# Case Study #1: Dr. Patricia Fulco

- Demographic Information
  - 61yo WM, works part time (cleans his church); has a secondary house which has tenants; conversant and communicative without any deficits and good social support
- Past medical history
  - HIV [well-controlled, viral load undetectable with CD4=1289 (38%)]; treatment-resistant HTN (on four medications)
- Additional case history
  - Referred to this provider in 2016; Patient on glyburide and metformin when consulted. Addition of sitagliptan. Had some hypoglycemic events, and patient resistant to start insulin. From 2016-2019 A1C values, 6.9-8%. Stopped sitagliptan and glyburide in November 2019 after A1C in August 8.1% and based on GLP data and added liraglutide. Insurance denied semaglutide and dulaglutide. No improvement in A1C values with continuation of 8-8.5%. In December 2020 added insulin and A1C 8.5%. Return to clinic this week and no improvement with insulin glargine and A1C increased to 8.9%

# Case Study #1: Dr. Patricia Fulco (cont.)

- Main concern: Continued management with lowering A1C values
- Any clarifying questions?
- Any recommendations?

# Case Study #2

- 28yo F (first pregnancy) presents to clinic for assessment of HTN and proteinuria. She is at 35 weeks of gestation and has been followed by maternal-fetal medicine/"high-risk" OB. She notes "constant headaches" and blurry vision. She has also been having RUQ pain for several weeks.
- Exam: BP 165/120, CV RRR s murmur, pulm CTA, abd +RUQ TTP
- PMH: no previous hx HTN or CKD.
- Meds: prenatal vitamin
- Labs: noted to have proteinuria of ~2 grams/day on previous labs. Cr 1.5. CBC normal. AST/ALT in 200s (~4-5x normal)

# 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

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**Diabetes and Hypertension Project ECHO -**

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# 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> and 4<sup>th</sup> Thursdays — 12-1:30 p.m.

### **Mark Your Calendars — Upcoming Sessions**

**April 8:** Combination therapy for hypertension

**April 22:** Diabetes in pregnancy

**May 13:** Practical approaches to injectable agents

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



Thank you, and see you in two weeks!



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