



American Heart Association.  
**Hypertension**

Chat Discussions  
Saturday, September 12, 2020

2020 Hypertension and Kidney Council Award Lecture Session

name	message
Curt Sigmund	Good morning. Welcome to the 2020 Hypertension and Kidney Council Award Lecture Session.
John Floras	Thank you, Curt
Jennifer Pollock	Good morning!
Annet Kirabo	Good morning!
Analia Loria	Good Morning all!
Gregory Fink	Morning, all...
Mary Haynes	Another smokey morning in California, good morning
Justin VanBeusecum	Good morning everyone, looking forward to these great award presentations!
Meenakshi Madhur	Hi everyone!
Carmen DeMiguel	Good morning!
Alexander Staruschenko	Good morning and congratulations to all Awardee!
Curt Sigmund	Good morning. Welcome to the 2020 Hypertension and Kidney Council Award Lecture Session.
Ross Tsuyuki	Good morning from Canada
Camilla Wenceslau	Good morning from OH! Bom dia!
Patrick Pagano	Good morning, congratulations all!
Shi Fang	Morning~
Joshua Samuels	Morning
Susan Keith	Greetings!
Sumit Monu	Good morning all!!
Stephanie Watts	Good morning everyone!
Keisa Mathis	Good morning!
Nirupama Ramkumar	Good morning
Augusto Montezano	Hello to all and congrats to all awardees
Xiaohan Lu	Good morning.
Stephen Juraschek	Good morning!
Junie Warrington	Good morning all!
Dale Lauver	Good morning and congratulations to all the award winners!
Patricio Araos	Good morning ji

Ana Leite	Good Morning from New Orleans!
Curt Sigmund	Feel free to ask you questions to the speakers here in the chat box!
LilianCaroline Oliveira	Good morning from Sao Paulo.
Curt Sigmund	Congratulations Dr. Floras.
Susan Wall	Good morning!
Jesse Moreira	Good morning from Boston!
Annet Kirabo	Congratulations, Dr. Floras!
Ross Tsuyuki	On behalf of the Board of Directors of Hypertension Canada, hearty congratulations, Dr. Floras.
Jan Basile	Congratulations, John and good morning to all.
Bina Joe	Warm greetings from Toledo and congratulations to all awardees in this session
Sabrina Scroggins	Good morning from Iowa. Congratulations to everyone!
Dulce Casarini	Good morning from Sao Oaulo Brasil
Aaron Trask	Good morning! Congrats to the awardees!
Eman Gohar	Good morning! Congrats to all awardees
Jordana Cohen	Congratulations! Are there any recent advances facilitating less invasive measurement of sympathetic activity?
John Floras	Alas--there is as yet no 'global SNS biomarker' analogous to BNP for heart failure.
Jordana Cohen	Thank you! One can keep hoping :)
Italo Biaggioni	Low frequency variability of blood pressure can be used, but not nearly as reliable as MSNA
Thu Le	Dr. Floras, may be I am jumping ahead of your talk, but if the obstructive sleep apnea is corrected, does sympathetic nerve activity decrease? Are the changes permanent given the structural grey matter changes you are demonstrating?
John Floras	We had pursued that concept, Italo, but found, as reported in our 1997 Clinical Science paper (Butler GC et al) that low frequency BP variability was not increased in the heart failure cohort, despite their significantly higher MSNA
Yagna Jarajapu	Good morning
John Floras	Thu: a) yes; b) this, we do not yet know.
Josephine Amadi	Good morning all.
Patrick Pagano	Congratulations! Were these experiments followed up in animals whose Nox2 was knocked down or out or treated with Nox2 inhibitors?
Stephanie Watts	Am I correct that you have elucidated something of a 'disconnect' between sympathetic activity and BP in the human (e.g. effects of simvistatin?). What could explain this?

Frederique Yiannikouris	Good morning from Lexington, KY. Congratulation to all awardees
Stephen Juraschek	Do you think these age-related MSNA patterns differ in indigenous populations without age-related BP patterns? How much of these patterns are environmentally driven?
Stephanie Watts	You are answering my question!
John Floras	Patrick, the experiments referred to were performed by Dr. Irv Zucker and his colleagues--please review his subsequent work.
Patrick Pagano	Thank you.
David Pollock	Dr. Flores, do you think other sensory nerves aside from baroreceptors are important in this context, such as the renal sensory nerves?
Meenakshi Madhur	Is the modest effect of treating OSA on BP due to the fact that vascular/cardiac damage is already so far advanced and would treating OSA earlier result in greater improvement in BP?
Fernando Elijovich	are MSNA and BP unlinked in obesity, too?
John Floras	Thank you, Stephanie. This is exactly the paradox referred to in the objectives.
Stephanie Watts	Are there similar disconnects in the animal literature? I'm wondering how your findings limit how we interpret SNA data
John Floras	Stephen, I am not aware of data that would address your questions.
John Floras	David, yes--there is a literature relating MSNA to GFR--but beyond the scope of this 20 min review!
Ross Tsuyuki	Bravo, Dr. Floras!
Stephen Juraschek	No prob - thank you for a great talk!
Gregory Fink	Excellent talk, John
Anika Hines	Thank you, Dr. Floras, for this interesting work!
Stephanie Watts	I appreciated this so much, Dr. Floras. Thank you
Eric BelinDeChantemele	thank you Dr. Floras for this exciting lecture and congratulations
Rhian Touyz	WONDERFUL TALK JOHN- CONGRATULATIONS
Italo Biaggioni	John, great body of work. COngrats
Adam Straub	Terrific talk Dr. Floras and congratulations!
Curt Sigmund	Great informative talk Dr. Floras. Thank you.
John Floras	Fernando, in our paper in the Sep issue of Hypertension we report the influence of BMI on MSNA of men and women
Nirupama Ramkumar	Great talk, Dr. Floras. congratulations !
Curt Sigmund	Congratulations Dr. Pollock.
Camilla Wenceslau	Congratulations Dr. Floras.
Karen Griffin	Congratulations Dr. Floras!! Excellent Work!
Mark Santillan	Congratulations Dr. Pollock!

Barbara Alexander	Congratulations Dr. Pollock!
Patrick Pagano	Outstanding work, Dr. Floras, thank you.
Meenakshi Madhur	@Jennifer - love the title! Congratulations!
John Floras	Thank you to all--and in particular my teachers, mentors and colleagues, v
Patrick Pagano	Congrats, Jennifer!
Stephanie Watts	Congratulations, jennifer
Michelle Gumz	Congratulations Jennifer!! Well deserved!
Analia Loria	Congratulations, Jennifer! Well deserved
Hana Itani	Congratulations Dr. Pollock!
John Floras	...colleagues Rhian Touyz and Virend Somers
Annet Kirabo	Classic title! Congratulations Dr. Pollock!
Nirupama Ramkumar	Congratulations Dr. Pollock !
Yagna Jarajapu	Congratulations, Jennifer!
Gary Pierce	Congratulations Jennifer!
Patricio Araos	Congratulations Dr. Pollock, from Chile
Baojian Xue	@Dr. Pollock, Congratulations
Annet Kirabo	Someone furry is stealing the show behind you Jennifer :)
Dulce Casarini	Congratulations Dr. Pollock, from Brasil
Allyn Mark	John Floras. Congratulations. You've taken insights into SNA to new heights and your presentation was exceptional.
Fernando Elijovich	when the KO becomes hypertensive with salt, what happens with osmolality at the tip of the papilla?
Jennifer Pollock	Annet, that's Leo and Louie!
Annet Kirabo	Love them :)
Jennifer Pollock	Fernando, great question.....we need to do that
Frank Spradley	fantastic work everyone. congrats to the awardees. enjoying your talk jennifer!
Sumit Monu	Dr. Pollock, did you conduct any study using ENaC inhibitor and measured the blood pressure?
Adam Straub	Does NO signal through a cGMP dependent or independent mechanism in the collecting duct to modulate ENaC?
Gregory Fink	Do the KO mice drink more water?
Alexander Staruschenko	Collecting duct and ENaC are important(goofy)!!! Still mechanisms of ENaC control are not completely clear.
Patricio Araos	How do you explain the increase in sodium without another electrolyte? How is the excretion of sodium and potassium?
Jennifer Pollock	Sumit, yes we have prelim unpublished data showing decreased bp
Frank Spradley	have you put these CD NOS1 KO mice on high-fat diet? do they also have a hfd-sensitive bp phenotype?

Sumit Monu	Great thanks
Jennifer Pollock	Adam, I really want to know this and these are planned experiments
Adam Straub	Thanks!
Jennifer Pollock	Greg, no they don't drink more. Kelly Hyndman has published more in depth on NOS1 and collecting duct aquaporin regulation
Gregory Fink	Thanks. Frank S -- excellent question.
David Pollock	Adam, data in animals and even humans show that urinary NOx and cGMP are tightly correlated to Na excretion, so my bet is that it works via soluble G-cyclase like endothelium.
Jennifer Pollock	Patricio, we have new studies with Dr. Staruschenko on NOS1 regulation of K channels. This paper is in revision now
Patricio Araos	Thanks j
Jennifer Pollock	Dr. Spradley, we don't have the answer yet to your question but those experiments are planned
Meenakshi Madhur	@Jennifer - do you see changes in NKCC2 or other sodium transporters in the kidney with HDAC inhibition?
Patricio Araos	In the same line with Dr. Madhur do you see changes in Pendrin with HDAC inhibition?
Karen Griffin	Studies with HFD will be interesting!
Frank Spradley	:)
Jennifer Pollock	Meena, great question....working on it! In our JCI Insight publication we did RNAseq and see changes in Na transporters expression.
Annet Kirabo	I bet this pathway is true is immune cells too. We find ENaC in APCs
Jennifer Pollock	Annet, love to work with you
Patrick Pagano	Hi Jennifer, Do you expect that HDAC1 or its inhibition is influencing pathways/enzymes ancillary to NO signaling that counterpose NO? I imagine there could be a counterbalancing effect at play.
Curt Sigmund	Is NOS directly acetylated/deacetylated by HDACs?
Jennifer Pluznick	Congrats, Jennifer #1! Excellent talk.
Curt Sigmund	Great talk Jennifer!
Dewan Majid	Congratulation Jennifer! Great talk , very informative!
Patrick Pagano	Beautiful work, Jennifer, congratulations!
Adam Straub	Fantastic work and talk Jennifer!
Megan Rhoads	Well done and well deserved, Dr. Pollock! Congrats!
Stephen Juraschek	Congratulations. Wonderful talk!
Jesse Moreira	Wonderful talk, Dr. Pollock!
Meenakshi Madhur	Great talk! Congrats again!
Annet Kirabo	Thanks very much for such an excellent talk! Congratulations!
Eric BelinDeChantemele	Great talk Jennifer! Congrats!

Thomas DuBose	Excellent presentation; interesting findings. Thanks. Tom DuBose
Benard Ogola	Great talk and congratulations Dr. Pollock!
Camilla Wenceslau	Congratulation Jennifer.
Pablo Nakagawa	Congratulations for this great work! Do you know if sympathetic outflow to the kidney mediates changes in HDACs?
Michelle Gumz	Wonderful talk Jennifer! Congratulations!
Yagna Jarajapu	Congratulations for the expanded family!
JMichael Wyss	Great talk Jennifer. Congrats.
Justin VanBeusecum	Congratulations Dr. Pollock, what a fantastic talk!
Sabrina Scroggins	Excellent talk Dr. Pollock and congratulations!
Patrick Pagano	Congratulations, Stephanie!!
Susan Wall	Congratulations on a great talk!
Barbara Alexander	Congrats Stephanie!
Frederique Yiannikouris	Very nice talk Dr, Pollock.
David Pollock	Braelyn Parker Pollock born on August 14!
Annet Kirabo	Did not see the recent grandbaby born a few weeks ago in the pic
Francisco Rios	Congratulation Dr Watts
Annet Kirabo	Congratulations
Stephanie Watts	Thank you Francisco
Jennifer Pollock	Patrick, Yes, lots more to do!
Curt Sigmund	Congratulations Dr. Watts!
Karen Griffin	Congratulations Jennifer! Looking forward to next studies:)
Augusto Montezano	So happy to see you there Stephanie! Congrats!
Camilla Wenceslau	Congratulations Stephanie :)
Sumit Monu	Congratulations Dr.Watts!!
Stephanie Watts	Curt, thanks so much...help me with this science, all!
Patrick Pagano	Thanks, Jennifer. Looking forward to hearing all about it!
Hana Itani	Congratulations Stephanie!!!
Stephanie Watts	Hana...I miss you! Thanks for being here
Anika Hines	Congrats, Drs. Pollock and Watts!
Rhian Touyz	Great presentation Jennifer- congratulations
Jennifer Pollock	Curt, we hypothesized that it would be direct; however so far our studies are showing that it more likely indirect via ETB receptor. Love to talk more if you want.
Junie Warrington	I like the energy of your presentation! Congrats, Stephanie!
Stephanie Watts	Junie - I can't help it. Its embarassing, but totally me!
Eric BelinDeChantemele	Congratulations Stephanie! does PVAT secrete Chemerin?
Tao Yang	I agree. That energy is inspiring. Congrats! Stephanie.

Stephanie Watts	YES...but it is hard to measure. No ELISAs detect this in the RAT
Stephanie Watts	Eric, there is also argument for whether chemerin can at ALL be 1) stored; and /or 2) synthesized on demand
Jennifer Pollock	Pablo, great question. We don't know yet
Carmen DeMiguel	Dr Watts, does chemerin secretion increase in the diabetic setting?
Stephanie Watts	Carmen, it does - most of the data are from Type II Diabetic humans
Stephanie Watts	This would be PLASMA chemerin...but stay tuned for what I think that does/does not mean...
Jennifer Pollock	Thanks everyone for all the kind words! Our granddaughter, Braelyn, was born August 14 after I submitted the recording. She's amazing!
Gregory Fink	Congrats on talk and new granddaughter!
Patrick Pagano	Congratulations, Jennifer and David!
Annet Kirabo	Congratulations Dr. Watts! So intriguing work! I may be getting ahead of you but cant help wondering the role of immune cells in chemrin signaling given that they also accumulate in PVAT
Kim Tran	Dr. Watts, any data whether or not there's a direct interaction between the chemerin1 receptor and alpha1-AR so that chemerin potentiates PE or NE-induced contraction?
Meenakshi Madhur	Congrats Stephanie! Chemerin is a chemoattractant for immune cells. Have you looked for changes in immune function in your chemerin ko mice?
Stephanie Watts	Kim: no. We...and one of the kickers here are POOR antibodies against the chemerin1 receptor
Dewan Majid	Congratulation Dr. Watts! Nice talk!
Camilla Wenceslau	Hi Stephanie - would different type of fat play a role in chemerin release?
Patricio Araos	Is there any data on the plasma levels of chemerin for people with only overweight without hypertension? that could predict the development of hypertension
Analia Loria	@Stephanie, Do you use visceral fat as PVAT on you mesenteric arteries, or the periaortic one? if so, do you think there is a depot-specific expresion of chemerin?
Stephanie Watts	Meena: Our KO rats are NOT something we've investigated in this way - and I would LOVE to share them!
Stephanie Watts	YES Patricio...Go to the PUBMED Id at the end of the slide that shows the range, and there are MANY that show morbidly obese (but not HTN) can have stunningly high chemerin
Kim Tran	True - hardly any of the GPCR antibodies are reliable!
Patricio Araos	Thanks Dr. Watts

Stephanie Watts	ANALIA..while chemerin is expressed in all fat depots, what chemerin DOES in each fat depot appears to be different. For example, chemerin regulates adipocyte size in the visceral, mesenteric fat but NOT retroperitoneal fat. Make sense?
Analia Loria	yes!
Stephanie Watts	ANALIA: Another point - we can use BOTH vessels and do so - white fat and brown fat (mes, aorta)
Spencer Cushen	Dr. Watts, great talk so far, is there any evidence for a reduction in sensitivity for chemerin due to increased adiposity (and thus chemerin dose) over time and does this have any implications for treatment of long term existing hypertension or obesity?
Eric BelinDeChantemele	any change in body weight with ASL?
Eric BelinDeChantemele	ASO***
Frank Spradley	there is evidence to suggest that liver innervation can regulate blood pressure. does sympathetic drive to the liver regulate hepatic chemerin release into the circulation?
Stephanie Watts	Spencer: Possibly...look at the work of Chris Sinal....
Spencer Cushen	Thank you!
David Pollock	@KimTran is absolutely spot on. Maybe resurrect binding studies?!
Stephanie Watts	ERIC: No...over this short 4 weeks, there was not a change in overall weight BUT....could see a change in total fat weight (so I'm still not sure what makes up the REST of the fat)
Annet Kirabo	Any cross talk between high fat and high salt intake... since they are often taken together?
Stephanie Watts	I've asked Gifford in the UK to consider opening a US office for radioligand binding/autoradiography - wouldn't that be great?
Stephanie Watts	Annet...stay tuned...
Kim Tran	@Dr. Pollock: going back there is the way to go ...
Annet Kirabo	Yes - you are answering!
David Pollock	benefits of being a grandfather, I guess
Frank Spradley	i think this slide gets at my question. thanks.
Stephanie Watts	frank...good. We have NOT added the two - HS and HF - together. Greg Fink was hugely important in these experiments
Kim Tran	@Dr. Watts: that'd be great
Gregory Fink	We did find that a low salt diet prevented HFD-induced hypertension in the Dahl S rat.
Jennifer Pollock	Congratulations, Stephanie!
Jennifer Pollock	Do you know if chemerin interacts with RAAS?
Stephanie Watts	To you, too.

Carmen DeMiguel	or the ET-1 system??
Aaron Trask	Stephanie, great talk and congrats! Maybe you said it and I missed it - chemerin is expressed in PVAT, but assume it's also expressed in other fat. Do you think the in vivo results are a result of local PVAT or, e.g., visceral fat?
Stephanie Watts	VERY little on chemerin and RAAS and only at the level that chemerin can use ACE to create these isoforms
Frank Spradley	i have a model of obese hypertensive pregnancy. but not assessed vascular function of chemerin! great talk!
Eric BelinDeChantemele	any sex differences in chemerin levels?
Curt Sigmund	Fantastic talk, Stephanie.
Dulce Casarini	Congratulation Dr. Watts, Excellent talk!
Rhian Touyz	Wonderful presentation Stephanie - thank you
Owen Richfield	Interesting talk. Does the fact that the fat-derived chemerin affects blood pressure point to para-arterial fat deposits in producing chemerin in a paracrine fashion, or perhaps are there larger fat deposits separate from the vasculature that produce chemerin and somehow affect blood pressure when the liver-derived chemerin does not?
Frederique Yiannikouris	any change in adipocyte morphology with ASO?
Robert Speth	fantastic presentation
Dale Lauver	Awesome presentation, congratulations Stephanie!
Eman Gohar	Great talk, Dr. Watts
Camilla Wenceslau	Congratulations Stephanie !! What a great talk!
Ines Armando	Congratulations Dr Watts, great talk!
Jonnelle Edwards	Awesome talk! Thank you Dr. Watts!!
Junie Warrington	Awesome presentation! Congrats again!
Yagna Jarajapu	Is chemerin regulated by leptin?
Stephanie Watts	Aaron - PVAT is expressed in ALL fats and at pretty similar protein levels/mg protein...regulations of this is a question!
Annet Kirabo	wonderful talk! Thank you and congratulations again!
Michelle Gumz	Fantastic talk Dr. Watts! Congratulations!
JMichael Wyss	Congratulations; excellent talk and research.
Patrick Pagano	Wonderful talk, Stephanie, congratulations!
Carmen DeMiguel	Fantastic talk, Dr. Watts!
Stephen Juraschek	Congratulations!
Meenakshi Madhur	great talk!
Adam Straub	Great talk Stephanie!

Eric BelinDeChantemele	great talk Sephanie! Congratulations again
Sabrina Scroggins	The design of the targeting using nanoparticles is elegant and exciting! Dr. Watts you are a dynamic speaker and I truly enjoyed your talk. You now have me thinking about obesity-driven HTN, chemerin, and inflammation!
Dawn Kuszynski	Congratulations Dr. Watts!
David Pollock	clap clap, great job, Stephanie!
Patrick Pagano	Organizers, I love this format which allows questioning in the "running time" of the presentation and thus I think is more thorough and precise. It also allows for a more extensive question and answer activity than usual.
Aaron Trask	@Stephanie - thanks!
Brandon McFarlin	Very nice talk, Dr. Watts.
Stephanie Watts	YAY Sabrina!
Tianxin Yang	Congratulations Stephanie!
Justin VanBeusecum	Wonderful tlak Dr. Watts and congratulations!
Analia Loria	Great Talk, Stephanie!
Meenakshi Madhur	Congratulations Susan!
Karen Griffin	Thank you and Congratulations, Stephanie!!
Pablo Nakagawa	Excellent Dr. Watts! Based on your ex vivo studies I assume chemerin induces an acute vasoconstriction. Thus, do you conclude that in obesity there is a tonical vasoconstriction mediated by chemerin? Is there any mechanism that suppress such mechanism such as receptor desensitization?
Annet Kirabo	Congratulations Dr. Wall!
Stephanie Watts	Frederique - YES. Without chemerin, the adipocyte sizes shift to the left, so fewer big cells, and more small cells - David Ferland published this in Plos ONE..
Stephanie Watts	I'm so sorry if I've missed folks - I'll keep trying to answer...but please feel free to e-mail me. I really would love to share these tools and get at some of these questions with you
Benard Ogola	Congratulations Dr. Watts!
Stephanie Watts	Thank you all for tuning in on a Saturday - this is just happy
Frederique Yiannikouris	Nice work, congratulation Dr. Watts
Alexander Staruschenko	Dear Dr. Wall! Congratulations on behalf of the Council on the Kidney in Cardiovascular Disease!
Curt Sigmund	Congratulations Dr. Wall!
David Harrison	Over the long term, does chemerin induce expression of chemokines or adhesion molecules?

Stephanie Watts	Pablo - that's the idea. The LOCAL chemerin influences nerve and smooth muscle function. IN obesity (an SD HF model), chemerin-9 induced constriction is NOT modified vs control
Meenakshi Madhur	@David Harrison - chemerin receptors are present on many immune cell types, particularly macrophages (I just looked it up!)
Stephanie Watts	David H. We need to answer this question relative to these molecules in fat but the answer in the psoriatic literature is more in the direction that chemerin itself activates different immune cells
Stephanie Watts	and Meena just answered this, too!
Meenakshi Madhur	I just noticed that 4 out of 6 awardees in this session are women!!
Annet Kirabo	I love the focus of sodium
David Harrison	but the effect on adhesion molecules would be on endothelial cells
Thu Le	Susan, is pendrin's expression or activity influenced by diuretics or RAS blockade?
Annet Kirabo	Susan, it will be interesting the effect of pendrin expression in immune cells on BP regulation
Susan Wall	Thu
Curt Sigmund	Note: The chats from Thursday and Friday are posted on the Hypertension website programming page.
Stephanie Watts	That is excellent to know, Curt. Thank you
Curt Sigmund	Chats from today/tomorrow likely posted on Monday.
Susan Wall	Thu: Pendrin abundance per cell and in the apical region goes up both with thiazide and loop diuretics. Similarly, it goes up with angiotensin II given in vivo. Ang II applied in vitro also increases chloride absorption in the CCD through a pendrin dependent mechanism
Curt Sigmund	<a href="https://professional.heart.org/en/meetings/hypertension/programming">https://professional.heart.org/en/meetings/hypertension/programming</a>
Meenakshi Madhur	<a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5908278/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5908278/</a>
Patricio Araos	is there any change in plasma chloride levels?
Curt Sigmund	@Meena, thanks for noticing!
Susan Wall	Patricio: That depends on the treatment model you are studying. In most models, plasma chloride concentration is the same in wt and pendrin KO mice. However, in models of metabolic alkalosis such as with aldo treatment serum HCO <sub>3</sub> <sup>-</sup> is higher in the KOs so chloride concentration is lower.
Anne Kwitek	Terrific talks this morning! Congratulations to all the awardees.
Patrick Pagano	@Curt, Kudos to you and all for this innovation and vision.
Patricio Araos	Thanks Dr. Wall ji

Patricio Araos	many sodium transporters are modulated by cytokines (most of them pro-inflammatory), is there evidence that Pendrin is affected both in its function and in its subcellular distribution?
Susan Wall	We are very interested in that question. However, to my knowledge no one has looked at that in kidney. There is a lot of data in lung, however, that pendrin is regulated by cytokines.
Sumit Monu	Dr.Wall, How did you identify CNT?
Thu Le	Susan, there is a pendrin small molecular inhibitor, has it been tested in models of hypertension?
Pablo Nakagawa	Congratulations Dr. Wall! Since pendrin expressed in the CNS I was wondering if pendrin KO mice exhibit any change in drinking behavior/salt preference or vasopressin release?
Curt Sigmund	Thank you Patrick
Susan Wall	Mainly by its location in the cortical labyrinth and sometimes also by identifying CNT markers through double labeling.
Sumit Monu	Thank you. Which markers?
Susan Wall	Pablo: We have not found any regulation of pendrin by vasopressin. However, it is regulated by luminal flow. We know that pendrin is in the adrenal medulla. However, I was not aware that it is in the CNS. Is it?
Alicia McDonough	does high G stimulate via MR?
Tianxin Yang	Congratulations, Susan! Wonderful talk!
Susan Wall	Alicia: When you say high G, what are you referring to?
Alicia McDonough	glucocorticoids
Susan Wall	Alicia: Glad you asked. We are looking at that now.
Dulce Casarini	Great talk Dr Wall, Congratulations!
Michelle Gumz	Wonderful talk Susan! Congratulations!
Annet Kirabo	Thanks very much for a wonderful talk! Congratulations Susan!
Alicia McDonough	Really great clear presentation and also provocative! Will change what I teach the med students this week
Hana Itani	Great Talk Dr. Wall! Congrats
David Harrison	Great talk Susan. Congratulations.
Justin VanBeusecum	Wonderful talk Dr. Wall, congratulations on the award!
Stephanie Watts	Susan, I learned ALOT about Pendrin. Thank you
Meenakshi Madhur	Great talk Susan!
Susan Wall	Thanks everybody!
Gregory Fink	Very clear talk. Thanks and congratulations.
Curt Sigmund	Congratulations Adam!
Jennifer Pollock	congratulations, Susan!!
Adam Straub	Thanks Curt!
Hana Itani	Adam I always enjoy your talks, Congratulations!

Mark Knepper	Nice talk, Susan. Is there another enzyme that consumes glucocorticoids?
Stephanie Watts	Adam, congratulations to you..more learning for me!
Eric BelinDeChantemele	congrats Adam!
Patrick Pagano	Go, Adam, congratulations!
Meenakshi Madhur	Congratulations Adam! Well-deserved!
Thomas DuBose	Outstanding and very scholarly presentation, Susan. You were very wise to stick with pendrin. You have very thoroughly demonstrated its important role in IC function and in the regulation of electrolyte homeostasis.
Dewan Majid	Congratulation Susan! learned a lot about pendrin!
Annet Kirabo	Congratulations, Adam!
Susan Wall	Mark: Not to my knowledge.
Christine Klemens	Fantastic talk! Do you have any idea what trafficking pathways or molecules might be involved in the apical vs subcellular pendrin localization?
Adam Straub	Thanks Annet and Meena!
Jennifer Pollock	Congratulations, Adam.....NO rules!
Susan Wall	Christine: That is not well understood. I know that a number of groups are working on that.
Camilla Wenceslau	Congratulations Adam!
Analía Loria	Well done, Adam! NO congratulations ;)
Peng Xu	Congratulations from UVA, Adam!
Shi Fang	Hi Dr. Straub! Do these KO mice exhibit any signs of arterial stiffening or remodeling with/without Ang-II?
Adam Straub	Shi, we did not measure stiffening but would anticipate that over time they would develop more. Remodeling was not different at 2 weeks but if we wait longer it might be.
Curt Sigmund	Can you measure the oxidized/reduced state of sGC directly?
Adam Straub	very difficult! One has to use sGC modulators to tease this out
Thu Le	Adam, have you checked renal blood flow in the SMC KO mice?
Curt Sigmund	What I thought, thanks.
Adam Straub	Thu, no but we need to!
David Pollock	Anyone looked to see how this variant is expressed in sickle cell disease? or with sickle crisis?
Adam Straub	we have and BP and vasculopathy are increased.
Adam Straub	BMT transplant of SS into the T117S causes increase pulmonary hypertension
David Pollock	any measures of sickle nephropathy?
Adam Straub	David, have not looked

Annet Kirabo	Great talk, Adam! Congratulations!
Curt Sigmund	Great talk Adam!
Shi Fang	Thank you Dr. Straub! Congrats!
Eric BelinDeChantemele	great talk adam
Sergey Dikalov	Adam, Great talk.
Augusto Montezano	Congrats Adam
Ines Armando	Congratulations Dr. Straub!
Nirupama Ramkumar	Wonderful talk Dr. Straub ! Congrats
Styliani Goulopoulou	Great talk, congratulations, Adam!
Stephanie Watts	Once again, I learn! Thank you, Adam.
Karen Griffin	Fantastic Presentation, Adam!!
David Pollock	Congrats, Adam. Looking forward to translating these findings.
Alicia McDonough	Congrats Annet!!!
David Harrison	Very interesting Adam. Fantastic work.
Jennifer Pollock	Adam, I would be very interested in acute stress pressor responses. Have you looked at that?
Gregory Fink	Terrific talk. Great slides. Congrats, Adam.
Annet Kirabo	Thanks Alicia, Thanks for nominating me!
Sergey Dikalov	Adam, did you test if BAY reduces vascular oxidative stress and/or vascular inflammation.
Curt Sigmund	Congratulations Annet!
Styliani Goulopoulou	Congrats Annet!
Francisco Rios	Nice talk Adam. Congrats for the award
Patricio Araos	Congrats Dr. Kirabo ji
Adam Straub	Thank you everyone and to the HTN council!
Justin VanBeusecum	Congratulations Annet!
Annet Kirabo	Thanks Curt and Stella!
Francisco Rios	Congratulations Annet.
Michelle Gumz	Congratulations Annet!
Anika Hines	Congratulations, Dr. Kirabo!
Carmen DeMiguel	Congratulations Annet!
Eric BelinDeChantemele	Congratulations Annet!
Stephanie Watts	Annet...amazing. I love your story
Patrick Pagano	What a truly inspiring story, Annett, congratulations - well deserved!
Camilla Wenceslau	Congratulations Annet! :) what a beautiful introduction....
Frederique Yiannikouris	Congratulation Adam!

Benard Ogola	Congrats Dr. Kirabo!
Nirupama Ramkumar	Congrats Dr. Kirabo ! You are such an inspiration
David Pollock	Congrats, Annet! Thanks for sharing your story! Truly inspiring.
Junie Warrington	Congrats, Annet!
Rheure Alveslopes	Congrats Annet !!!
Eman Gohar	Annet, Congrats! This is very inspiring!
Jennifer Pollock	congrats Annet! Very well deserving!
Sumit Monu	Very inspiring indeed!! congratulations Dr. Kirabo!!
Italo Biaggioni	You make us proud Annet
Dale Lauver	Inspiring story. Congratulations!
Karen Griffin	Amazing Story!!!! Wholehearted Congratulations to You!!
Mohammed Nayeem	Congratulation Annet, you made it in US!
Jackson Wright	Congratulations and keep up the great work
Stephen Juraschek	So inspiring. Thank you for your openness
Michelle Gumz	Thank you for sharing your story! I've got goosebumps. Very inspiring
Annet Kirabo	Thank you
Patricio Araos	Dr. Kirabo, Have you measured isoketals in renal APCs from mice with hypertension?
Rheure Alveslopes	Beautiful presentation Dr Kirabo. For how long have you incubated your DC with High salt?
Lizzy BREWSTER	Congrats Annet! Greetings from Amsterdam, Lizzy
Ines Armando	Have you tried lower than 190 mM concentrations of Na <sup>+</sup> en you, congratulations
Annet Kirabo	Patricicio, we incubated for 24 hrs in these experiments
Sabrina Scroggins	Are these DCs a uniform population prior to transfer?
Rheure Alveslopes	thank you!
Annet Kirabo	Ines, yes in a paper recently published in CVR, we performed a dose response and salt starting at about 162 mM can activate these cells
Patricio Araos	Dr. Kirabo, Have you measured isoketals in renal APCs from mice with hypertension?
Carmen DeMiguel	Annet, have you evaluated the effect of ENaC on T cell activation with salt?
Ines Armando	Thank you!
Annet Kirabo	Sabrina, we used CD11c antibody to isolate them with about 95% purity
Annet Kirabo	Great question Carmen. We have not looked at ENaC in T cells yet.
Patrick Pagano	Annet, As you likely know gp91ds-tat (aka Nox2ds-tat) was shown to be highly selective for Nox2. That notwithstanding, NOX isozymes can interact with other NOXs. Have you studied a potential feed-

	forward mechanism w/r/t other NOXs or other oxidases in your experiments?
Carmen DeMiguel	Thanks!
Michelle Gumz	I'm curious, what time of day do you harvest cells from animals? The immune system has very strong circadian rhythms
Rheure Alveslopes	How do you think HS modulates inflammasome NLRP3?
Augusto Montezano	Hi Dr Kirabo - what do you think about Nox regulating H and pH? Would that play a role in your high Na/increased Nox activity?
Sabrina Scroggins	Thank you. To clarify, were they uniform in their CD80/86/CLII profiles? As DCs have multiple subtypes and functions, I'm curious of the salt drives a more inflammatory DC phenotype for instance?
Patrick Pagano	Maybe NOXs 1 & 4 too are involved, I don't recall.
Annet Kirabo	Patricio, yes, we have published multiple papers showing that renal DCs have IsoLGs
Carmen DeMiguel	What marker did you use for DC IHC in the kidney? CD83?
Frederique Yiannikouris	Is there a sex difference?
Alexander Staruschenko	Congratulations Dr. Kirabo! Glad to see that ENaC plays a critical role in different types of cells and overall involved in the control of BP and development of HTN.
Annet Kirabo	Patrick, thanks for this question. It will be interesting to look at other NOXs. Our experiments indicate that in DCs, IsoLG production due to ROS is almost entirely dependent on NOX2
Frank Spradley	congrats, annet. and thanks for your story.
Frank Spradley	does the sex of macrophage impact their response to salt?
Sergey Dikalov	Patrick, Dendritic cells have mainly Nox2. We also saw the ROS-induced-ROS formation in the mitochondria in response to salt-Nox2 induction.
Patrick Pagano	Thank you.
Patrick Molina	Hi Dr. Kirabo — nice work! As C57BL6/J mice have fully functional immune systems, are the adoptively transferred DCs able to establish a niche for themselves and is it known if there is a homing preference for some tissues over others with this model?
Adam Straub	Have you genetically knocked ENaC subunits in DCs to show that IsoLGs are diminished?
Patrick Pagano	@Sergey, could there be a paracrine effect of Nox2-derived ROS on neighboring tissue and cell oxidases?
Carmen DeMiguel	Fantastic talk, Annet! Congrats!
Annet Kirabo	Your concern is well taken Michelle. The time we isolate DCs has been consistently between 1-3 pm, but we need to carefully evaluate impact of time

Meenakshi Madhur	Congratulations Annet! Excellent!!
Anika Hines	Awesome talk!
Michelle Gumz	Thanks!

Recent Advances Session 5: KCVD Council Symposia: BP Genetics 2.0- Genetic Determinants, Risk Scores, and Complications

name	message
Chris Sampson	Welcome! As you enter the player, you should hear music playing. If you do not, please click the Request Support button. Thank you and enjoy the conference!
Alicia McDonough	Welcome to the KCVD Symposium, I am your moderator. Speakers welcome your interaction via chat.
Thu Le	Dr. Hung, what is the rationale for the cut off of pain score of > 5? Is there evidence that mild pain doesn't affect BP?
Adriana Hung	That is a great question. It is a cut off used in VA epidemiological studies as it correspond to mild pain
Oleg Palygin	:)
Alicia McDonough	Did you pick up the Bartters or Gitelman's variants?
Nora Franceschini	were these rare variants validated in additional samples so one can be sure this is not a finding just by change
James Luther	The PDE3A gene is the same that Fred Luft has been searching for and finally found...
James Luther	<a href="https://www.ahajournals.org/doi/10.1161/CIRCULATIONAHA.119.043061">https://www.ahajournals.org/doi/10.1161/CIRCULATIONAHA.119.043061</a>
Adriana Hung	Thanks Matt
Kailash Pandey	Adriana - In these studies, if inter-individual variability has been included.
Adriana Hung	Is a GWAS using standard statistical approaches. I don't think that a measured of interindividual variability is included,
Thu Le	Dr. Hung, are VA datasets like these available publically, such as in dbGAP?
Melis Sahinoz	Congratulations Dr. Hung!
Adriana Hung	yes, the MVP is in dbGAP and I believe that one dbGAP ID has all the MVP studies
Alicia McDonough	Thanks for an amazing presentation. Lots to mine!
Adriana Hung	thanks Melis
Thu Le	Thank you!
Charisse Camarote	Hello everyone... Watching from Ormoc City, Philippines
Adriana Hung	Dr. Le I will emial you the dbGAP ID.
Thu Le	Great, thanks. Thu_Le@URMC.Rochester.edu

Anne Kwitek	Dr Hung, would you please send that ID to me as well? akwitek@mcw.edu
Adriana Hung	yes :)
Anne Kwitek	Thanks so much! Great study - congrats
Adriana Hung	Thanks Anne
Alexander Staruschenko	I think sodium/potassium ratio might be better to consider than sodium or potassium alone.
Alicia McDonough	exclusion for LSD seems it would prevent seeing an impact of LSD
Alicia McDonough	The salt intake is calorie intake independent?
Tanika Kelly	Yes, salt intake is calorie independent.
Tanika Kelly	We excluded LSD for ethical reasons, since we had a high salt diet phase. In addition, if participants were on a LSD, we would not expect change when switching from baseline to LSD.
Alicia McDonough	thanks, makes sense
Tanika Kelly	Usual sodium intake is actually quite high in this population, similar to our high salt diet phase.
Nora Franceschini	which GWAS BP meta-analysis you used to get the SNPs for GRS?
Eman Gohar	Was 18 g salt very high?
Alicia McDonough	Does the population have baseline high K intake or low like in US?
Eman Gohar	Were subjects compliant?
Tanika Kelly	We actually identified all BP variants from the GWAS catalogue achieving $P < 5E-8$ with evidence of replication. We used an East Asian ancestry specific GRS, and examined a full GRS in sensitivity analyses.
Atul Bali	@Dr. Gohar - They ate 3 meals a day for 1 week, in the study kitchen under observation :)
Fernando Eljovich	did pressor responses to salt correlate to depressor responses to salt depletion in individual subjects?
Nora Franceschini	very cool, thanks
Eman Gohar	:)
Adriana Hung	Nora for you previous question replication for rare variants was BioVU and UKBB --late response :)
Eman Gohar	Were data stratified by gender?
Nora Franceschini	thanks Adriana
Tanika Kelly	Subjects were very compliant based on urinary excretions of sodium and potassium collected during each intervention phase.
Tanika Kelly	We did not stratify by gender. This is a good point, as we previously noted gender differences in BP salt sensitivity.
Eman Gohar	thanks for clarifying

Atul Bali	Dr. Kelly - I'm curious - do salt sensitive patients have a transient positive sodium balance (as evidenced by difference between 24 hour urinary sodium and daily dietary sodium administration) transiently, immediately after being started on a high salt diet? Is part of the problem impaired excretory mechanisms?
Tanika Kelly	They at 3 meals a day for 3 weeks in a study kitchen.
Alicia McDonough	Does the lack of dietary impact imply that dietary impact is due to "Lifestyle" and not genes?
Tanika Kelly	By day 5 of the intervention phases, excretions of sodium and potassium were consistent with the intervention phase. We did not check previous to day 5.
Nora Franceschini	what there differences between the two GRS you used?
Dewan Majid	Thanks Tanika! nice talk!
Atul Bali	Thank you
Tanika Kelly	No difference between GRS's used.
Eman Gohar	Thanks, Dr. Kelly, were women protected from salt sensitivity in your previous observations? Were these premenopausal women?
Alicia McDonough	Important findings. Thanks for a very clear presentation. How would physicians use this?
Tanika Kelly	Average age was about 38. Females tended to be more salt-sensitive.
Eman Gohar	Intersting!
Eman Gohar	Unexpected though!
Tanika Kelly	I don't think these findings have clinical implications at this point. We are interested in exploring mechanistically how salt-resistance could relate to hypertension. There is an interesting mouse model that showed this previously.
David Pollock	Would be interesting to see how measures of inflammation would predict salt sensitivity or resistance.
Alicia McDonough	I agree, David
Tanika Kelly	Good point, David
Cheryl Laffer	Annet is working on it!
Daria Ilatovskaya	Very insightful. Enjoying this session immensely so far!
Alicia McDonough	This has such a significant impact it seems physicians should be screening for GSTM1 genotypes routinely.
Daria Ilatovskaya	Agree!
Alicia McDonough	In smokers are the impacts increased?
Thu Le	Alicia, we have not looked at the impact of smoking, but good question and we will see if we can tease this out
Alicia McDonough	Would also be interesting to look at role in meso-american CKD - those agricultural workers who get kidney failure.

Anne Kwitek	Hi Thu. I wondered if you have any data in this population regarding any adverse drug responses? GSTM1 null is recognized as affecting drug metabolism
Thu Le	Alicia, would love to get access to those cohorts!
Carmen DeMiguel	Dr. Le, what genetic background did these KO mice have?
Ines Armando	Are the heteros hypertensive too?
Thu Le	Anne, you are absolutely correct that the enzyme plays a role in drug metabolism. I am not aware of adverse drug response by genotype.
Thu Le	Carmen, the genetic background is 129S6
Carmen DeMiguel	Thanks!
Carmen DeMiguel	Are they salt-sensitive?
Thu Le	Ines, we did not look at heterozygous mice, due to cost of telemetry transmitters
Nora Franceschini	Not sure if there is data on the GSTM1 deletion frequency in Amerindian ancestry, which would be important if studying mesoamerican nephropathy
Ines Armando	Thanks!
Anne Kwitek	Thanks Thu!
Thu Le	Yes, they are salt-sensitive, but we didn't see an effect on salt-sensitivity in the knockout
Carmen DeMiguel	Thanks!
David Harrison	What dose of ang II did you use?
Carmen DeMiguel	How about immune cells in the kidney in these Ang-II treated mice?
Thu Le	David, we used 1000 ng
Carmen DeMiguel	Just seeing my answer! Thanks!
David Harrison	If you want to see augmentation of BP in response to ang, its better to use a usually subpressor dose. We find 100 ng/kg/min. When you use 1000 (or even 490) you get a maximal response and its hard to see something higher.
Thu Le	You are correct
Thu Le	David.
Thu Le	We wanted to see maximal effect with respect to kidney injury, so we chose the highest dose
Thu Le	it's possible there is an effect at a lower dose
Thu Le	but I think what we are seeing is there is an effect on kidney injury and inflammation independent of blood pressure
Michelle Gumz	Great talk Thu! Have you looked into the GSTM1 genotype in the ABPM data from AASK?
Thu Le	Thanks, Michelle. We have not, but should!

David Harrison	Try a lower dose. We also recently found for some reason that in the past 2 years, mice have become much more sensitive to ang II. Previously, 140 ng/kg/min was "subpressor", now we see BPs of 165 with this. 100 ng/kg/min is borderline and 75 is subpressor.
David Harrison	Not sure if this is the C57Bl/6 mice or if it is the ang II.
Thu Le	Thanks, David.
Fernando Eljovich	why does BP increase with tempol and sulphoraphane?
Thu Le	Fernando, I have absolutely no idea why that is the case. I wish I could answer that question.
Thu Le	It certainly was not expected.
David Pollock	with you on the sprouts, Thu
David Harrison	Try with bacon
Thu Le	:)
Brandi Wynne	Roasted. Life altering.
Carmen DeMiguel	Did you find sex differences in the effects of GSMT1 KO on BP, kidney damage and inflammation in response to Ang-II?
Thu Le	Carmen, we are looking into sex differences.
David Harrison	The ARIC data are amazing!!
Carmen DeMiguel	Thank you! Looking forward to your results!
Thu Le	Thank you!
David Pollock	are these also high in iron content?
Alicia McDonough	We should determine genotype and start feeding null babies broccoli babyfood.
Carmen DeMiguel	:)
Thu Le	David P, I don't know if they are high in iron
Nora Franceschini	this is an incredible project, Thu, really moving from experimental to human and getting some clinical perspective. Congratulations!
Thu Le	but will look
David Harrison	watch out for nitrate toxicity
Thu Le	Thanks, Nora!
Tanika Kelly	Congrats, Dr. Le. This was very interesting!
Ines Armando	Congratulations great work!
Kailash Pandey	Thu- Great talk. Thank you
David Pollock	wonder about iron content in kidney of the KO animals
Alicia McDonough	THank you to Adriana, Kelly and Thu for a most impressive KCVD Symposium. Lots to do!
Nirupama Ramkumar	Beautiful talk ! Thank you
Anne Kwitek	Great talk and study Thu.
Carmen DeMiguel	Fantastic talk, Dr. Le! Amazing work!

Atul Bali	Will share these results with my kids to encourage broccoli intake. Thank you! :)
Thu Le	Thank you, all!
Brandi Wynne	Really great talk!
Alexander Staruschenko	Thanks to all speakers and attendee!
Kristian Vitu	excellent! thank you
Susan Kunish	Thank you everyone and apologies for the sound issues experienced
Luojing Chen	Excellent presentationThu!
Kenneth Jamerson	Very Nice blend of basic and clinical medicine, Bravo!
Thu Le	Thanks again, all, for attending and your kind comments!

### Hypertension Management in the Era of Covid-19: Has the Time for Remote Patient Monitoring of Hypertension Finally Arrived?

name	message
Chris Sampson	Welcome! As you enter the player, you should hear music playing. If you do not, please click the Request Support button. Thank you and enjoy the conference!
Gbenga Ogedegbe	I am in session now. Don't see anyone.
JBrian Byrd	Hello--I, too, am in session.
Steven YAROWS	I'm here also
Richard McManus	Hi everyone, I'm moderating this session and looking forward to some interesting talks! Richard McManus, Oxford
Jan Basile	You all start in 3 minutes. Good luck!
Gbenga Ogedegbe	This feels like Earth 2 to me....
JBrian Byrd	Thanks, Jan!
Richard McManus	My first impression is you need to press "play" to hear any music...
Steven YAROWS	I miss seeing everyone
JBrian Byrd	Me, too
Jordana Cohen	Likewise -- not the same
Richard McManus	Hi Jordy!
Jordana Cohen	Hello! So excited for this session!
Steven YAROWS	Jordy, great talk earlier
Gbenga Ogedegbe	Would be a great session!

Stephen Juraschek	This is such an important issue in our primary care practice
Richard McManus	Any thoughts from you guys on why HT control has got worse as per Paul Muntner's paper last week?
Yvonne Commodore-ensah	Agreed Stephen!
Anika Hines	Indeed!
Stephen Juraschek	Hi Yvonne and Anika!
Steven YAROWS	I am guessing control has worsened due to competing interests in PCP practices and the lack of accurate measurements
Richard McManus	Why are monitors so expensive in US? We can get a basic validated monitor eg Omron or A&D for \$20??
Anika Hines	Hi Stephen!
Gbenga Ogedegbe	Regarding Muntner's paper - issue maybe the shift in thresholds for diagnosis?
Steven YAROWS	The thresholds were under 140/90 with worse control
JBrian Byrd	In addition, I wonder whether the obesity epidemic is manifesting in poorer blood pressure control
Richard McManus	good points Steven and Brian
Richard McManus	Gbenga, as Steven says I think control worse even with same target ...
Steven YAROWS	Not sure why the monitors are so expensive but really they are cheap compared to other medical devices (i.e. CPAP)
Gbenga Ogedegbe	Could be. Will need to look at the data across ethnic groups and racial groups because obesity epidemic is worse in Blacks
Jordana Cohen	Agree regarding competing interests. I think allostatic load has been ballooning
Sandra Taler	Hi Steve,I think you need to use the <130/80 goal.
Stephen Juraschek	The discordance between home and office differ by age
Stephen Juraschek	Its worse in older adults
Anika Hines	Thanks...I was about to ask
Steven YAROWS	Sandra, I usually do use 130/80 but main goal is systolic
Richard McManus	Home vs office seems to be closer once you get to 130/80mmHg in office - any thoughts on that?

Steven YAROWS	older people like me have more variable systolic bp
William Cushman	Yes, if BP is measured correctly in both places home may be same or higher at home at lower BP levels.
Stephen Juraschek	<a href="http://validatebp.org">validatebp.org</a>
Stephen Juraschek	Great resource
Steven YAROWS	office bp is rarely measured correctly outside of htn clinics
JBrian Byrd	Too true, Steve
Yvonne Commodorem ensah	<a href="https://stridebp.org/bp-monitors">https://stridebp.org/bp-monitors</a> is also a great resource
Anika Hines	Very good point
JBrian Byrd	Patients comment on the distinction between our BPTtrue-based unattended approach and what they encounter in other settings.
Jackson Wright	<a href="http://validatebp.org">validatebp.org</a> still has too choices. Hopefully more will evaluated soon
Ian Kronish	Nurses can be really helpful in training patients in correct home BP measurement protocol.
JBrian Byrd	Richard, I know Martin Myers have found what you mentioned, as SBP approaches 130 mm Hg, the difference between and office and out-of-office starts to go away. I don't think I know the exact explanation.
Steven YAROWS	The limitation of AOBP in PCP practices are cost and lack of rooms (not as much of a problem post covid)
Ian Kronish	AMA also has excellent resource for patients. Here's link to a video: <a href="https://www.youtube.com/watch?v=gUHALsLeeoM">https://www.youtube.com/watch?v=gUHALsLeeoM</a>
Angela Brown	Hi Steve, Gbenga, and Jan! Miss seeing everyone....excuse me for interjecting social!
Gbenga Ogedegbe	I do too!
Steven YAROWS	thanks, me too
Stephen Juraschek	Agree re: <a href="http://validatebp.org">validatebp</a> - the process is industry initiated - so if a company does not pursue validation it won't get on the list
JBrian Byrd	Steve, I've talked to PCPs about using AOBP: "How long does it take?" "Just 6 minutes!" "Brian, guess how many minutes I have per patient..."
Jordana Cohen	New wave of devices coming soon on <a href="http://validatebp.org">validatebp.org</a> ! Need more companies to engage in validation -- looking forward to James' talk

Richard McManus	stridebp and the BIHS alternative are done by reviewing the literature...
Steven YAROWS	very good point Not much time per patient
Jackson Wright	The 2017 guideline and new scientific statement recommend goal of ,130/80 for both home and office consistent with above comments
JBrian Byrd	There's no question the dynamics of room management are perceived as different in the specialist clinic and the PCP clinic--and probably with good reason.
Romsai Boonyasai	How does validatebp.org compare with stridebp?
Jordana Cohen	In the US, many of the devices don't match the model numbers in the literature so we require input from the device companies as to which are which
Sarah Melville	Most of the guidelines suggest confirming htn diagnosis out-of-office & ABPM preferred. The pending results of the MASTERS study will be key to understand the correlation of office and out of office measures
Steven YAROWS	Jordy, great point
JBrian Byrd	Yes, the US model-specific info is so value, Jordy
JBrian Byrd	*valuable
Jordana Cohen	Romsai, I believe James will go into this in his talk. Stridebp.org is ESH/ISH, validatebp.org is AMA (US)
JBrian Byrd	Sarah, I agree the MASTER trial's results should be very illuminating
Romsai Boonyasai	Thank you. Looking forward to it!
Aimee Garza	Excuse me for interjecting- can someone provide more info on MASTER trial?
Angela Brown	When is MASTER's expected to end?
Richard McManus	This is the pubmed link to protocol: <a href="https://pubmed.ncbi.nlm.nih.gov/30573476/">https://pubmed.ncbi.nlm.nih.gov/30573476/</a>
Imama Naqvi	Does it matter if its a new diagnosis of HTN?
JBrian Byrd	<a href="https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6303603/">https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6303603/</a>
Aimee Garza	thanks
Sarah Melville	Thank you, Dr. Byrd, ;) It shows still recruiting, but that it ended this past June: <a href="https://clinicaltrials.gov/ct2/show/NCT02804074?term=MASTER&amp;cond=hypertension&amp;draw=2&amp;rank=1">https://clinicaltrials.gov/ct2/show/NCT02804074?term=MASTER&amp;cond=hypertension&amp;draw=2&amp;rank=1</a>
Richard McManus	pretty sure its still going...
Eric Maclaughlin	Hypertension Canada also has a list of recommended BP devices.

Stephen Juraschek	BP logs are so rough - from transcription and for calculating means
JBrian Byrd	Yes--this is worth more discussion, Stephen
Sarah Melville	yes, the US and Canada and the EU all have validated device lists specific for their region
Richard McManus	I love the scroll!
JBrian Byrd	When I talk to techy folks about using Excel to average hand-written BPs during visits, they are in disbelief.
Steven YAROWS	biblical
Richard McManus	;)
Sarah Melville	the difference is that Canada recognizes the practical need for a validated wrist cuff in some pts., but the AMA has yet to recognize this practicality
Angela Brown	I like the spreadsheet method
Emily Andaya	Target BP by AHA has a very good BP log . Can average am and PM
JBrian Byrd	It's probably fruitless to be prescriptive about how to log the BP data. People will gravitate (reasonably enough!) toward what works for them.
Richard McManus	Wrist cuffs probably best when big cuff is too small...
JBrian Byrd	Thank you, Emily. That's good to be reminded of that resource.
Steven YAROWS	wrist cuffs are accurate if used correctly, but how do you know if there are used accurately? I have published on this
Ross Tsuyuki	Great resource for home BP tracking and communication is Sphygmo (an App): <a href="http://mmhg.ca/sphygmo-for-healthcare-providers-and-caregivers/">http://mmhg.ca/sphygmo-for-healthcare-providers-and-caregivers/</a>
Ian Kronish	I find it helpful to ask patients to focus their measurements in the week before planned clinical visits so as not to be overwhelmed with data
Richard McManus	Our work shows 50% of patients never mention they have a BP monitor unless asked directly - anyone else find this?
Angela Brown	I often have patients bring the cuff to the visit and demonstrate how they take the pressure. Very enlightening and an opportunity for education. Fortunately, I have time to do it; most don't.
JBrian Byrd	Steve, earlier in my career, I spent a lot of time talking with people about arm position problems with the wrist cuff. Now, every time I bring it up, patients say the device is informative on this point & they show the correct arm position.
Angela Brown	Most of the wrist monitors have an illustration on the device of the correct position
Steven YAROWS	Good point if they show you accuracy

Richard McManus	some wrist monitors "beep" when they are at the correct level - probably anything less than that means not being used properly as Steven is just saying
Stephen Juraschek	I don't like wrists, but useful for morbidly obese
Sarah Melville	yes, agreed, Dr. Tsuyuki, this free BP recording app designed by Dr. Padwal is evidence-based and most accurate for BP recording according to the guidelines and automatically averages the measures as per the guidelines: <a href="https://sphygmobp.com/">https://sphygmobp.com/</a>
Michael Rakotz	Unfortunately many people (when studied) don't maintain correction arm position over time
Jan Basile	Bravo, wrist at heart level like an arm cuff!
JBrian Byrd	Thanks, Richard. This is what my patients tell me these days--the wrist cuff informs them if they are in the wrong position.
Stephen Juraschek	Few companies are validated for extra large cuffs
Steven YAROWS	Actually it does not indicate correct position but rather correct angle of the wrist device. You can achieve the right angle above your head if you try
Jan Basile	We need thigh cuffs with the obesity epidemic and they are hard to find.
Jordana Cohen	Regarding patients owning home devices and not telling their providers, we see similar patterns in the US. Many providers are still skeptical of their accuracy (Bev Green has a poster on this during the session)
Steven YAROWS	Jan, you are correct'
JBrian Byrd	Steve, that is a very important point -- thank you for explaining that.
Sarah Melville	there remains a validation issue that some papers by Dr. Padwal and Dr. Hiremath suggest that the device needs to be validated to the individual- i.e. not all device algorithms have the same accuracy for all individuals
JBrian Byrd	I wonder at times whether we should be using conical cuffs. I think few people have them.
Stephen Juraschek	I like the targetBP approach for individual device validation, although it is a bit complicated for general med clinics and hard to do yearly
Steven YAROWS	The new codes are thanks to Mike!
Sarah Melville	so when someone buys a validated device they should take to their physician visit to check that the reading is the same as the device used in the office
Richard McManus	@Steven - I need a picture of someone with a wrist cuff over their head!
Aimee Garza	if you had a miniature monitor that could be inserted under the skin and was validated - would you use it or is that overkill for your patients?

Steven YAROWS	I can take the picture of me!
Daichi Shimbo	What a great session.
Richard McManus	@jordy - thanks for the info re Bev
Daichi Shimbo	So timely.
JBrian Byrd	Sarah makes a great point that Jordy has also made in discussions with me. Check the calibration of the cuff in the user of it, rather than accepting validation as the final word.
Stephen Juraschek	its a shame Omron does not support remote data transmission in the US and there is still such a reliance on 3rd parties for programming
Stephen Juraschek	many monitoring companies make decisions based on the tech (bluetooth versus cellular chip) - not one device validation
Steven YAROWS	I am always suprised when you ask patients what they device they use at home
Richard McManus	We are working with Omron in UK and they have Omron connect which works now with a web interface and new system coming in 2021... hopefully might go international if we can show it is effective
Stephen Juraschek	apps are complicated, require tech savvy - and bluetooth transmission failure can be 1/10, which can frustrate patients
Steven YAROWS	Device makers develop what they think we need without asking us what we need They know best
Richard McManus	*telemonitoring systems
Stephen Juraschek	@Richard - this sounds great!
Ian Kronish	I've heard different opinions about "validating" home BP devices in the office - how rigorous are the validations that we really do in practice? Is it worth all the effort?
Stephen Juraschek	@Ian - would be a great study
Richard McManus	@Ian I have always just used a validated device and seems ok
JBrian Byrd	@Jordy: thoughts on whether the juice is worth the squeeze? I know you found issues in patients on dialysis with a popular device?
Jordana Cohen	@Richard agree -- this is exciting/I hope translates to other countries. We've tried working with Omron to use their system here but very challenging to integrate in large health systems
Michael Rakotz	Richard - we have a version of that here now with WiFi hub, but expensive.
Steven YAROWS	you really cannot validate a device n the office, is my experience

Stephen Juraschek	@Steven - completely agree
Jim Li	@Juraschek - Omron does have VitalSight - can support remote patient monitoring and feed the data to EMR
Anika Hines	Will these slides be made available? They are not currently linked in my resources tab.
Stephen Juraschek	Thanks Jim - I'd love to learn more - will f/u with you
Daichi Shimbo	@SYarows - great talk. Thanks!
Ian Kronish	Slides should be available later today or tomorrow, with the chats saved
Jordana Cohen	@Byrd: I'm a firm believer in only purchasing validated devices but then performing individual validation. Subgroups of patients with different vascular behaviors (CKD/ESKD, pregnant patients) I think in particular are prone to poor individual-level validation anecdotally
Eric Maclaughlin	There is a very useful validation template on targetBP.org website
Gbenga Ogedegbe	@Jim how much does the VltalSigt cost per patient?
Steven YAROWS	I can send slides or answer questions at steven_yarows@ihaccare.com
Richard McManus	@Anika, the other presentations were available when I entered the talk. Not sure about @Steven's
Jordana Cohen	If you click resources below the chat, the slides are there for download now
Angela Brown	Steve - this is great! I'll probably contact you about a couple questions regarding the billing.
Ian Kronish	New York State Medicaid has tried to limit barriers to coverage for home BP devices - does Medicaid in other devices provide coverage?
Steven YAROWS	Thanks, Daichi
Ian Kronish	Medicaid in other states I mean!
Stephen Juraschek	Wonderful prez! Thank you!
Richard McManus	@Steven - great talk - thanks!
Romsai Boonyasai	Great presentation, Steve. Very informative.
JBrian Byrd	Great talk @Steve
Jordana Cohen	Great talk!!!
Yvonne Commodorem ensah	Thank you Steven! Very informative
Daichi Shimbo	We all follow you Dr. Byrd!

JBrian Byrd	Thanks, Daichi :)
Imama Naqvi	Does billing for remote monitoring change if we are monitoring patients in other states?
Richard McManus	@Brian, you've cut off the bowtie...
JBrian Byrd	Yes--bow tie, or no tie. The only good options!
JBrian Byrd	Since COVID hit, I just keep it simple
Jackson Wright	Great talk Stephen Y
Steven YAROWS	btw, diastolics can be artificially measure high with the oscillometric method in some patients
Richard McManus	@Brian :)
Anika Hines	Great talk, Steven! Thanks!
Steven YAROWS	thanks all!
Richard McManus	@Steven do you find this especially in AF (when the monitors are not so good in any case)
Jim Li	@Gbenga - the per month fee for VitalSight is quite affordable, but the challenge is to ensure the patient having at least 12 readings per month. I can have my colleagues follow up with you for details.
Gbenga Ogedegbe	very informative talk Steve - thanks for keeping it really simple and practical!
JBrian Byrd	I highly recommend this Chen & Wang review
Stephen Juraschek	@Anika - HBPM has neat implications for studying microagressions...would love to discuss with you more!
Steven YAROWS	Certainly with afib but also with NSR It is unexplainable
JBrian Byrd	<a href="https://www.karger.com/Article/Fulltext/489855">https://www.karger.com/Article/Fulltext/489855</a>
Yvonne Commodorem ensah	Looking forward to your talk @Gbenga.
Stephen Juraschek	Thank you Brian! Great resource
Gbenga Ogedegbe	welcome Yvonne!
Sarah Melville	This BP recording app by Dr. Padwal is much better than VitalSight: <a href="https://sphygmobp.com/">https://sphygmobp.com/</a>
JBrian Byrd	Sarah--your paper!
JBrian Byrd	And your patient page!
Sarah Melville	our paper! thank you Dr Byrd awesome!, ;)

Daichi Shimbo	Great information for both patients and clinicians.
Sarah Melville	*our papers! thank you, Dr. Byrd, ;)
Jackson Wright	Unfortunately, the hope is that we can do a better job instructing our patients to measure BP than training and retraining office staff
JBrian Byrd	Too true. Too true.
Richard McManus	@Brian, we found increase in ABPM/HBPM following the 2011 NICE guidance - anything similar in US since latest guidelines?
Steven YAROWS	I agree with that
Jordana Cohen	Agree, though AMA/AHA came up with a great retraining module: <a href="https://cpr.heart.org/en/courses/achieving-accuracy-bp-measurement">https://cpr.heart.org/en/courses/achieving-accuracy-bp-measurement</a>
Daichi Shimbo	I am going to guess that ABPM use fell this year for obvious reasons.
Jordana Cohen	We took part in a trial retraining staff evaluating its effectiveness -- hopefully results will be published soon
JBrian Byrd	I was wondering what has happened this year with ABPM. Someone will need to study the effect of the new reimbursement policies, updating your prior study @Daichi
Gbenga Ogedegbe	The problem in my opinion is the cumbersome nature of criteria for reimbursement of ABPM - could explain the low uptake
JBrian Byrd	I agree--the criteria are unwieldy and difficult to remember
Daichi Shimbo	@Gbenga - I agree. Also, the devices themselves are not reimbursed.
JBrian Byrd	Right--and they're not inexpensive, particular with the software cost included!
Ian Kronish	we find the CMS reimbursement for ABPM too low compared to all the effort; but we still try our best to offer when we can
JBrian Byrd	I agree. It was a lot of process for a relatively modest change.
Joseph Flynn	The 2017 pediatric guideline also endorsed expanded use of ABPM
Daichi Shimbo	@Byrd - this is a nice paper. Well done.
Richard McManus	In UK guidelines since 2011 have recommended ABPM but no funding for equipment either
Steven YAROWS	Our compliance department will not let us submit if the patient wears it under 24 hours , even by 1 minute
Dave Dixon	As always, a pleasure to work with @Byrd and @Luther
Daichi Shimbo	@DavieDixon - congrats as well.
JBrian Byrd	That was so neat to do that qualitative analysis with you. A new approach for me to such a study.
Eric Maclaughlin	Great paper @Dave et al
Steven YAROWS	I have never heard of an audit by CMS for these criteria, not worth their time!
JBrian Byrd	Too cumbersome, these criteria, in my opinion.

Gbenga Ogedegbe	just curious - who helps CMS come up with these criteria? AMA?
Daichi Shimbo	The most interesting thing about the CMS policy is that they don't distinguish between WCH and WCE and MHT and Masked Effect. So even though they focus on diagnosis, could also do ABPM among those with meds.
Angela Brown	We've gotten to a point where we do the monitoring on whoever we feel necessary, whether reimbursed or not.
Stephen Juraschek	@angela Us too
Joseph Flynn	@Angela - that's our approach as well.
Jordana Cohen	Same, @Angela
Daichi Shimbo	@Gbenga - AMA and AHA submitted a NCD request to CMS with propose criteria which CMS is free to reject or accept.
Steven YAROWS	Angela, they won't audit you
Dave Dixon	Here's a link: <a href="https://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=294">https://www.cms.gov/medicare-coverage-database/details/nca-decision-memo.aspx?NCAId=294</a> but the exact process isn't that clear, in my opinion
JBrian Byrd	I hear myself making the same point made earlier by @Ian--the patients can do better when well trained that what is achieved in the typical clinic
JBrian Byrd	*than what
Jordana Cohen	We do 2-6/week, very few get reimbursed. We also have trained our 7 second year fellows to read them and they all receive them first to interpret, then send to a preceptor to confirm (luxury of academia, but also many of them go on to start ABPM programs)
James Luther	TargetBP has great handout instructions for patients- but is there a great video instruction for them somewhere?
Richard McManus	@Brian completely agree with both of you!
Angela Brown	After 15 years of this, no audit yet. Clearly document the reason in the record.
Michael Rakotz	Targetbp.org and search SMBP
JBrian Byrd	We owe so much to @Michael for what I'm discussing now
Gbenga Ogedegbe	@Angela - that is true but the real issue is that these criteria while easy for academic centers to get used to is actually not easy for small independent practices who care for over 60% of patients. That space is really where the action should focus if we are ever to come close to closing the gap in BP control. Those practices are woefully underresourced

Ian Kronish	here's a video on how to self-measure BP - from AMA: <a href="https://www.ama-assn.org/delivering-care/hypertension/one-video-you-need-accurate-blood-pressure-readings">https://www.ama-assn.org/delivering-care/hypertension/one-video-you-need-accurate-blood-pressure-readings</a>
Jessica Newmyer	targetbp.org has wealth of resources for clinicians and patients including video instruction for patients on how to take their bp measurement
James Luther	<a href="https://targetbp.org/patient-measured-bp/implementing/smbp-training-patients/self-measured-blood-pressure-video-no-cc/">https://targetbp.org/patient-measured-bp/implementing/smbp-training-patients/self-measured-blood-pressure-video-no-cc/</a>
JBrian Byrd	Yes--targetbp.org is gold for this topic.
James Luther	excellent- thanks for pointing that out- hadn't seen the video!
Michael Rakotz	Has anyone used 99473 and 99474? Informal poll
Richard McManus	@James - nice video - thanks
Stephen Juraschek	@Michael - we are piloting them in our clinic
Angela Brown	@Gbenga - you are absolutely correct. I recall several years ago there was a campaign where CMS was soliciting recommendations to change the billing codes. I submitted 2 letters of justification. However, not sure if anything ever came of that as the codes didn't seem to change. Does anyone know? Is this a dead issue?
Michael Rakotz	@Stephen, let me know how it goes
Jordana Cohen	@Mike -- yes! But we can't get reimbursed for the first one (education) due to Penn's structure (it's an office code apparently)
Stephen Juraschek	willdo
Michael Rakotz	@Jordy - during public health emergency ok to use remotely and not do calibration for 99473 FYI
JBrian Byrd	Thanks @Michael & the TargetBP group for all the work that has led to these changes
Jordana Cohen	Thanks, @Mike!! (and Byrd for the shout-outs :p)
Richard McManus	@Brian - many thanks - enjoyed that bow tie or not!
Daichi Shimbo	@jordy and @rakotz - we don't know how long the "emergency" approval will go on for. Right?
JBrian Byrd	:thumbs_up:
Stephen Juraschek	Such a great talk. Thanks Brian!
Daichi Shimbo	@Byrd - well done sir!
Annet Kirabo	Thanks for a great talk!
JBrian Byrd	Thank you!

Dave Dixon	Great job, Brian!
Daichi Shimbo	that was awesome.
Jordana Cohen	Agree, this was fantastic!!
Romsai Boonyasai	Thank you for a great presentation, Brian.
Richard McManus	And now @Gbenga
Eric Maclaughlin	thanks for the great talk
Ian Kronish	The codes for remote monitoring 99453, 99454, 99457 reimburse a higher amount. Anyone using those yet for home BP telemonitoring?
Jan Basile	Thanks Steve and Brian!
Michael Rakotz	@Daichi - not sure. Also not sure if the telehealth exceptions will hold afterwards...
JBrian Byrd	Many thanks. Will we ever return to in-person? This is quite a nice format.
Ian Kronish	And agreed, great talk!
Mary Haynes	nice job, relevant
Karen Griffin	Fantastic and much needed information!
Yvonne Commodorem ensah	Thanks Brian! Great talk and thanks for the slides.
Michael Rakotz	@Brian - excellent talk as usual
Angela Brown	Thank you Brian. Wonderful information.
Steven YAROWS	thanks, brian!
Richard McManus	@Brian, another advantage of the format - in the UK it is almost 6pm and my partner has just brought me beer...!
Michael Rakotz	@Steve - also excellent talk!
Sarah Melville	Great presentation, Dr. Byrd!, great slides and very clear recording, thank you, ;)
Daichi Shimbo	@McManus. (thumbsup)
Gbenga Ogedegbe	@Brian, Great talk!
Steven YAROWS	Well it is 5PM somewhere!
JBrian Byrd	@Richard--I'm on service, or I would join you in that!
Richard McManus	data from @Gbenga are amazing in terms of the increase in HBPM!
Richard McManus	@Brian - my thoughts with you!

Stephen Juraschek	This is so timely. Well-performed HBPM could improve access to high quality hypertension care
Jackson Wright	Thanks Brian. Great talk and practical.
Anika Hines	@Stephen--agreed!
JBrian Byrd	Yes--good point, Stephen. The ability to distribute the benefits of BP monitoring to a broader group is powerful in a system in which some people simply are not getting to the clinic.
Stephen Juraschek	Groups with reduced access to care are also disproportionately impacted by COVID19 and assume greater risk coming into clinics for BP measurements
Stephen Juraschek	@Gbenga - So true!!
Dave Dixon	In my experience, patients need a coach to help them adhere to home BP monitoring and perform correctly -- great role for students, when available
Richard McManus	@Stephen - in the UK we have much higher risk in Black and other minority ethnic groups in COVID - really obvious in the lists of medics who have left us...
Steven YAROWS	HBPM need to be paid for by all insurance companies They have doubled their profits from Covid. They pay for OSA devices without much EBM
Richard McManus	@Steven - we are trying to get them on prescription in UK
Ian Kronish	We should advocate for coverage for home BP devices from Medicare too - affordability should not be a barrier
Stephen Juraschek	Completely agree! Devices should be covered period.
Yvonne Commodorem ensah	@Steven. Agreed! Especially for low-income patients with uncontrolled hypertension
Clarence Grim	As more than one in a household often has BP issues a device that can store readings on more than one person would be useful. Some will store 2 different people. Don't know of any devices do more. In US 1/2 the adult children are now living with their parents.
JBrian Byrd	It seems so _obvious_ that it would be cost-effective to pay for these device.
JBrian Byrd	*devices.
Anika Hines	YES!
Richard McManus	@everyone - completely agree
Angela Brown	A number of the patients at increased COVID risk are now unwilling to come to clinic. The number requesting telehealth visits remains high.
JBrian Byrd	Have insurance companies calculated a lack of cost-effectiveness somehow? Or has it simply not been seriously considered?

Daichi Shimbo	In our AHA/AMA policy statement on SMBP monitoring, we made the strong argument for paying for devices.
Daichi Shimbo	More to come in this space.
Steven YAROWS	they dont take htn seriously
JBrian Byrd	That's ironic in view of the downstream costs, @SY
Angela Brown	Making sure patients have access to the devices is very important
Stephen Juraschek	@Daichi - awesome and so essential
Ian Kronish	Clinical inertia still occurs with home BP monitoring! Need to find ways to support clinicians to intervene in between visits
Richard McManus	We've shown highly cost effective in UK where hospital care much cheaper so should be no brainer in US...?
Stephen Juraschek	Smartphone penetration high in nearly all demographic and SES groups - so data transmission can really improve as well
Yvonne Commodorem ensah	Thank you Gbenga for highlighting the critical role of nurses in BP management.
Sarah Melville	The PROOF-BP study by Dr. McManus has shown cost-effectiveness for SBPM
Stephen Juraschek	Great way to identify masked HTN in at risked groups
JBrian Byrd	I agree covering a home BP monitor seems like a no-brainer,@RM
Ian Kronish	Yes, patients need feedback
Richard McManus	@Ian we use our telemonitoring systems to remind clinicians and engage patients to ask for better treatment...
Steven YAROWS	If you pay for one device every 5 years, the yearly cost would be \$20 I waste that with urine microalbumins to get my dollars for incentives from insurance companies
Daichi Shimbo	@Gbenga - great talk as always.
Gbenga Ogedegbe	Thank you @everyone! Trying to catch up with Steve, and James
Annet Kirabo	Very insightful! Thanks very much for a great talk Dr. Ogedegbe!
Steven YAROWS	Great talk Gbenga
Richard McManus	@Gbenga showing our BPSmart collaboration - we have 25 datasets if anyone else has ideas for analyses let me know!
Gbenga Ogedegbe	@Mcmanus, I love all the TASMINH trials - very pragmatic!

Clarence Grim	As the first recommendation is to use DASH eating plan. Omron has a home device that will monitor UNA/K ratio which is very useful in tracking those trying to DASH. And IMHO only way to improve and monitor compliance. But only available in Japan.
Richard McManus	@Gbenga - you are too kind!
Angela Brown	'
Clarence Grim	With DASH SBP is down in 1 week and DBP in 2. As much as any single BP med.
Richard McManus	More details on TASMING4 here: <a href="https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)30309-X/fulltext">https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)30309-X/fulltext</a>
JBrian Byrd	TASMING4 is a favorite trial for sure.
Jordana Cohen	Agree -- TASMING4 has been an enormous influence on how we design our system-wide home BP programs
JBrian Byrd	Wow. I am learning so much from this talk.
Stephen Juraschek	My black and Hispanic patients often have never even heard of our patient portals; I think there are real disparities in how these technologies are even presented to patients
Ian Kronish	Advocacy for universal internet access will also be so important for health outcomes in years ahead
Daichi Shimbo	What Gbenga is showing has been my concern.
Stephen Juraschek	@Ian - so true
Daichi Shimbo	Will a high tide lift all boats?
Daichi Shimbo	or just some.
Steven YAROWS	also lack of internet in the semi and rural areas is a true concern that has been seen with Covid
Richard McManus	We've done a lot of consulting using telephone alone as hard to get video working in short primary care consult (10 mins in UK)
Gbenga Ogedegbe	I think the COVID-19 pandemic has raised real issues about rural healthcare and health delivery services to minority populations in urban settings. Would be interest to see what the data for HTN control looks like after the pandemic eases up.
Yvonne Commodore-ensah	Thank you for addressing the digital divide. It is wrongly assumed that telehealth will narrow health disparities. Need to engage internet service providers in improving broadband access.
Steven YAROWS	Zoom is like the Cellular commercial: "Can you here me now"
Jackson Wright	This is critically important talk that needs a wider audience.

Richard McManus	@Gbenga - agree, we're really worried that control will have gone off, especially in the deprived communities
Stephen Juraschek	@Yvonne - I agree, but I also think assess is better than we think and people should be given equal awareness of some of the tech options; some of my patients aren't even told about services
JBrian Byrd	@Gbenga this is fascinating.
Romsai Boonyasai	@Steven. Agree. We see a lot of digital access issues among low-income patients in Baltimore, but the barrier seems to be affordability of equipment and digital literacy. On the Eastern Shore, a rural area ~3 hours from here, patients cannot access wifi or high-speed internet even if they could afford it.
Richard McManus	This paper from Xu et al in BMJ 2015 suggests more than 6w delay in titrating HT meds leads to increased CVD events ... <a href="https://www.bmj.com/content/350/bmj.h158">https://www.bmj.com/content/350/bmj.h158</a>
Steven YAROWS	The sad thing is that the technology can be developed to address the disparity in care Measuring home bp correctly and sending the readings can uniformly be addressed today by technology
Stephen Juraschek	@Tony - its a real problem...
Dave Dixon	We are implementing a similar model this fall at VCU that includes both BP and glucose remote patient monitoring.
Daichi Shimbo	I have to say - I really like this format of live discussion during the presentation.
Steven YAROWS	yes
Dave Dixon	(thumbsup) agree! @Daichi
Richard McManus	@Daichi - I agree
Daichi Shimbo	So rare to have the worlds' experts in the chat box with an world expert is giving the lecture.
Romsai Boonyasai	Agree. Only wish I could enlarge the slides on my 13" laptop.
Yvonne Commodore mensah	The icing on the cake is that the presenters are also engaging in the discussion.
Angela Brown	Agree
Ian Kronish	Wow, impressive results for nurse comanagement
Stephen Juraschek	And the discussant commenting on their presentation at the same time - pretty cool
Daichi Shimbo	@yvonne - absolutely
Steven YAROWS	Also, I'm not wearing a mask now

Mary Haynes	Booyah nurse case managers
JBrian Byrd	Impressive results!!
Stephen Juraschek	@yvonne - so true re discussant
Steven YAROWS	great results!
Stephen Juraschek	I agree nursing engagement is a huge asset!
Richard McManus	@Gbenga - nice results!
Daichi Shimbo	@gbenga, nice to see sustained effects at 12 months.
William Cushman	Slides are available on PDF under resources.
Richard McManus	@Stephen, no jet lag either!
Jordana Cohen	This is amazing to see. Such a strong case for team-based care
JBrian Byrd	Right--@Richard--and we'll probably all eat a healthier meal today than if we were traveling!
William Cushman	I need 3 screens and 3 brains to watch presentation and chat ... .. don't thave either today.
Gbenga Ogedegbe	Interesting aspect is that these are poor patients with multiple comorbidity. @Jaclson was on the DSMB and Advisory Board for this study.
Steven YAROWS	Artificial intelligence will also help analysis of data to save time and costs
Yvonne Commodorem ensah	Yes! @Mary Haynes. Given these results, nurse case management of hypertension is a win-win :)
JBrian Byrd	These were patients living in NYC with income in that range? Or elsewhere?
Mary Haynes	Seems an NP has everything you need to run this program.
Sarah Melville	lol, yes, agreed with you, Dr. Cushman, ;)
Stephen Juraschek	@May our hypetension clinic just hired an NP to help run HBPM - we're quite happy with expansion of our team
Atossa Niakan	Totally agree Bill
Steven YAROWS	excellent point about glucose monitoring and not htn This was due to a promient legislator's sister having diabetes
Daichi Shimbo	In the US, I think there is a still a large gap interfacing EHRs, devices, and software.
Richard McManus	@Gbenga - similar issues in UK re getting HBPM properly integrated into EHR
Steven YAROWS	Epic charges a huge fee to integrate this, because they can

Daichi Shimbo	*cloud software
Angela Brown	Epic is not my favorite
Clarence Grim	Gingrich was the one that home BP monitoring. The power of politics
Clarence Grim	Home glucose
Steven YAROWS	yep
JBrian Byrd	Will we get rid of the fax machine, or have good integrated BP data first? Seems the same rules and laws are affecting both
Clarence Grim	Disabilities due to HTN is one of the reasons for the low employment rate I suspect.
Jordana Cohen	@Byrd so true!
Steven YAROWS	Hippa concerns about home bp data is unnecessary I don't care if anyone sees my home bp data!
Steven YAROWS	@grim-true
Michael Rakotz	HEDIS for 2020 and 2021 no longer require transmission of data and patient reported BPs are acceptable for numerator compliance in the controlling High BP HEDIS measure
Ian Kronish	Lots of confusion about how to incorporate self-reported home BP values into EHR
Daichi Shimbo	WOW. @mike
Gbenga Ogedegbe	Wonderful news @Michael! Did not know that. The small practices are really key.
Michael Rakotz	NCQA said they did this because of COVID
Daichi Shimbo	Another wow
JBrian Byrd	I wonder how that is documented, @Michael?
Dave Dixon	That's great (acceptance of patient reported BP)
JBrian Byrd	Average of home BPs written in the note?
Stephen Juraschek	So great!
Sarah Melville	I think privacy for home BP data is important for a number of reasons.
Mary Haynes	We have a long way to go, The future looks bright.
Daichi Shimbo	@Gbenga. Thank you for educating all of us with a great talk.
Beverly Green	Fantastic Talk!
Richard McManus	@Gbenga - many thanks for fascinating talk
Stephen Juraschek	Incredible talk - TY!!
Dave Dixon	Terrific talk @Gbenga
Anika Hines	Great talk! Thank you!!

Jordana Cohen	Learned so much, thank you @Gbenga!
Yvonne Commodorem ensah	Thank you @Gbenga! Excellent talk.
Romsai Boonyasai	Agree. Thank you.
Richard McManus	Now for @James Sharman
JBrian Byrd	Thank you, @Gbenga--wow, I learned a lot.
Michael Rakotz	@Gbenga - fantastic talk
Jordana Cohen	it's 3:30am in Tasmania -- is @James on?
Daichi Shimbo	Welcome Dr. Sharman
Uche Iheme	Very timely presentation, Gbenga. Thank you
Mary Macleod	Yes, excellent talk
Claudia Fotzeu	Thank you @Dr Ogedegbe
Imama Naqvi	@Gbenga amazing talk - so much to learn in secondary stroke prevention! thank you.
Jackson Wright	Great discussion Gbenga. Great outlined of a lot of issues. None insurmountable or cost prohibitive.
Ian Kronish	There is a great opportunity to have routine practice for telemedicine visits include patients recording home BP before the visit and asking medical staff to document in the EHR.
Angela Brown	Wonderful and timely presentation @Gbenga!
Claudia Fotzeu	Very informative and so insightful
Steven YAROWS	Thanks Gbenga!
Karen Griffin	Thank you !! Much work ahead!!
Ian Kronish	thanks Gbenga for the amazing talk and for sharing the results of your practice-changing study
Michael Rakotz	@Ian - Yes!
Gbenga Ogedegbe	Thank you all! Like @Bill Cushman - it felt real to be presenting and chatting at the same time. Really great session!
Lisa Forteschramm	thank you @Gbenga for the excellent talk and info
Richard McManus	@James is camping apparently with dodgy internet - he said he would try to join us ...

Clarence Grim	I believe that it is key to convince the person doing the measurement that their readings are a matter of life and death for each and every measurement.
Daichi Shimbo	This slides says it all.
Richard McManus	I love the paper aeroplanes...
Steven YAROWS	HBPM have been a consumer product and not medical product sold directly to patients. This needs to change
Daichi Shimbo	@McManus - simple and elegant slide but hits the nail on the head...
Richard McManus	@James' comments re the new International Standard on validation are really important
Richard McManus	@Daichi - completely agree!
Sarah Melville	yes, agreed, Dr. McManus & there is an amendment to the ISO2018 now so it is the ISO2020_Amendment 1
Atul Bali	ValidateBP.org - a good resource to guide patients to utilize validated devices for HBPM.
Jan Basile	One of the greatest benefits of a virtual meeting, especially when you have little money to pay speakers for their travel, is to get the expertise we are listening to without worrying about our expenses budget. A really good aspect of a virtual meeting!
Steven YAROWS	@jan-yes
Richard McManus	@Sarah - I find the different ISO standards hard to get my head round!
Daichi Shimbo	@Basile - agree!
Clarence Grim	The guidelines are set so that there is a lowish chance that the device will not be off by more that 10 mm Hg. This has not changed since the start of AAMI et. If set to 5 mm HG as an "acceptable" few if any would pass today.
Uche Iheme	@Jan Basil, Yes, Yes
Wanpen Vongpatanasin	Outstanding session, can anyone tell me what statistical approach it was used to estimate sample size of 85 to account for SD of different device of not >5 mmHg
Jan Basile	Daichi,, Thank you for all of your work this year. I will call you soon to speak and see how you are doing.
Sarah Melville	thank you, Dr. McManus, the Universal Standard for validation is the ISO 2020_Amendment 1
Jordana Cohen	@Jan couldn't agree more. James' international efforts in this area/publications are so pivotal in our understanding of the gravity of the issue of non-validated devices
Clarence Grim	And it assumes that an error of up to 10 mm HG is acceptable.

Daichi Shimbo	@Grim - what bothers me about that threshold is that it is the same threshold for sBP and DBP.
Richard McManus	@Wanpen some background here: <a href="https://pubmed.ncbi.nlm.nih.gov/29386350/">https://pubmed.ncbi.nlm.nih.gov/29386350/</a>
Clarence Grim	Concur
Stephen Juraschek	These numbers are dismal
Jan Basile	So we recommend the process without any knowledge of the devices accuracy. Wow!!
Richard McManus	@Stephen - agree - quite scary!
Anika Hines	Very concerning!
Joseph Flynn	FYI, there are only THREE devices validated for use in children according to StrideBP. A truly dismal situation
Jordana Cohen	I suspect the problem may be worse in the US -- we should evaluate this here
Clarence Grim	Ain't the free market great!
Richard McManus	but plenty of validated devices available, need to make sure sign posting effective
Daichi Shimbo	One comment about this important paper is that there are no widely used validation protocols for cuffless BP devices. I believe the IEEE 2014 is the only one.
Sarah Melville	that's an interesting point, Dr. Shimbo. Also, many ppl do not execute the Bland-Altman plot correctly
Ian Kronish	Pharmacists could play an important role here
Jordana Cohen	@Richard completely agree -- in the US we struggle even more to know which one are valid because most are re-labeled with a different model number for sale in the US
Dave Dixon	@Cohen Agree it's probably much worse in US
Richard McManus	@Joseph - a big problem in children. Similar in pregnancy
Steven YAROWS	This is why I tell patients which device to use and buy it online
Lisa Forteschramm	online purchases are sketchy. i always encourage my patients to purchase directly from the manufacturer (many of whom have amazon stores), rather than just get the best deal. there are sellers who purchase crap products and put look-alike stickers on them, photocopied paperwork, etc. online deception is extremely sophisticated
Wanpen Vongpatanasin	Thanks, @Ricahrd

Gbenga Ogedegbe	These numbers are really scary if you consider what it would look like in South Asia, Africa and other low resource settings where the focus on HTN is increasing rapidly - International World Federation of Hypertension needs to draw attention to this important paper
Jordana Cohen	@Daichi, great point! Tammy gave an amazing talk on Thursday on the issue of insufficient validation in cuffless devices (and that they all require repeated individual-level calibration)
Steven YAROWS	@Cohen-correct
Dave Dixon	I also worry about the large devices in pharmacies...not one of them ever seems to be the same regardless of which pharmacy you go to
Joseph Flynn	We actually give them out in our clinic, then we know that the families are getting a reliable device
Mary Haynes	So did Hedis do us any favors with home blood pressure numbers?
John Floras	We now have a local start up claiming FDA accepted accuracy of infra-red optical detection of facial microvascular pulsations from an iPhone. Do you have any experience with such?
Richard McManus	@Jordy, @Steven mentioned this earlier - in Europe we use a system of asking manufacturers to say which monitor a secondary device is based on
Jackson Wright	Even scarier is that even for validated devices, the validation is one time and no requirement for revalidation if changes are made in manufacturing and no notice provided regarding change.
Anika Hines	Wow! 81.8%
Clarence Grim	Correct!
Jordana Cohen	@Ricard we're working on that here with the validatebp VDL
Stephen Juraschek	Borderline fraudulent some of these companies
Anika Hines	@Stephen...I was tempted to use the term predatory
Clarence Grim	Maybe need a few law suits?
Atul Bali	@Stephen - No different from the "nutraceutical" industry.
Jordana Cohen	@Jackson - completely agree. The FDA requires a statement of "equivalence" which is very determined by the manufacturer. Very concerning
Steven YAROWS	The only good news is that these devices are more accurate than the bp measured in most non-htn offices!
Richard McManus	@John, have only looked at one similar device and claims not prove there... <a href="https://www.cebm.net/covid-19/question-is-the-lifelight-app-adequately-validated-for-blood-pressure-measurement-answer-no/">https://www.cebm.net/covid-19/question-is-the-lifelight-app-adequately-validated-for-blood-pressure-measurement-answer-no/</a>
Stephen Juraschek	@Anika @Atul so true...

Uche Iheme	I hope the validation process is not so onerous as to make it impractical for most manufacturers
Clarence Grim	That is because office measures are not properly trained and retrained using AHA guidelines.
Joseph Flynn	It is a disappointment that the latest international validation standard excludes children <12 y/o
JBrian Byrd	Interesting to ponder how to make a sustainable 'business model' for ongoing evaluation and validation of devices that is completely independent of the manufacturers.
Dinesh Neupane	Thank you, James. Great presentation.
Jordana Cohen	@Richard, thank you for sharing! Does anyone know when the AAMI/ISO will be coming out with their cuffless-specific standard?
Clarence Grim	It is not only onerous but also expensive. But so is stroke and MI and renal failure.
Richard McManus	@Jordy - not sure. That area seems another can of worms!
Jordana Cohen	Indeed!
Stephen Juraschek	@Uche I think the validateBP process is fairly reasonable - essentially need a FDA approval and an independent validation study
Clarence Grim	There are few places that do validation studies.
JBrian Byrd	Who pays them for that work?
JBrian Byrd	Typically speaking?
Steven YAROWS	manufacturers
Jordana Cohen	@Byrd that's the million dollar question
JBrian Byrd	Yea
Clarence Grim	A central validating service would be essential. As we do with scales that measure meat at the store.
Jordana Cohen	Device companies have also been reporting struggling to get validation studies published if it's just a standard BP device, even when the validation is done perfectly
Stephen Juraschek	The U.S. Federal government supports all sorts of measurement efforts for industry. A shame the same isn't done for BP devices...
Uche Iheme	@ SJ. Great. Thanks. Could it be that manufacturers are simply circumventing it
Richard McManus	In UK BIHS can do validation studies and have contract that ensures results are published whatever the outcome - suspect that is rare...
JBrian Byrd	Thanks, @Richard. That is good to know.
Clarence Grim	There was a move to do this years ago and AAMI was organized as industry did not want regulation.

JBrian Byrd	Those details like right-to-publish are important in this area
Jordana Cohen	@Richard that is a model we should all follow
Stephen Juraschek	@Richard - that seems like a great process
JBrian Byrd	(as in many other areas)
Richard McManus	@Jordy, we also audit validation study reports and they often show validation not properly done!@
Gbenga Ogedegbe	This talk should be watched by ALL medical students, residents and fellows!
JBrian Byrd	Great talk @James!
Clarence Grim	You never see a publication on a device that fails. Or almost never.
Jan Basile	Excellent, thank you!
Sarah Melville	Dr. Floras, the FDA does not assess devices for accuracy. As per the references in Dr. Sharman's presentation, most FDA cleared BP devices are not accurate
Stephen Juraschek	So great
Gbenga Ogedegbe	Very well done @James
Stephen Juraschek	Thank you!

### Preeclampsia, Pregnancy and Pediatric Hypertension

name	message
	Hello everyone, welcome to our session on Preeclampsia, Pregnancy and Pediatric Hypertension. I'll be serving as the moderator for this session. Thank you for joining us, and please feel free to submit questions and comments in the chat feature during the presentations.
Justin Grobe	
Brandi Wynne	Grobe!
Chris Sampson	This session will now start at 12:20 Central time
Daria Ilatovskaya	Looking forward!!!
Mark Santillan	Greetings from Iowa. Looking forward to the talks here!
Sumit Monu	during intermittent hypoxia, pups were kept with mother?
Lindsey Ramirez	These pups were separated from their mother, but we selected a short time frame so they wouldn't be separated for long.
Sumit Monu	Thank you
Wendy Bollag	Was their temperature maintained? Since young pups are very susceptible to hypothermia
Eric BelinDeChantemele	were the control separated as well?
Lindsey Ramirez	You're welcome!

Sumit Monu	i guess control were with the mother?
Junie Warrington	Have you determined whether these short term separation from dams have any impact on any of the outcomes you are measuring?
Lindsey Ramirez	Correct! controls were not separated from their mother. When we started the study we did a small batch with and without mother and saw similar measurements so we chose to keep these animals with their mother.
Justin Grobe	Were body temperatures of the IH pups assessed? I'm wondering if they exhibited reactive hypothermia responses, and/or if you kept them warmed (and if the pup temperatures mattered for outcomes)?
Patrick Molina	Did the hypoxia affect the weaning reaction and subsequent established microbiota?
Frederique Yiannikouris	Can maternal separation affect as well?
Eman Gohar	Have you look at cortisol levels?
Frank Spradley	is there a model of preterm birth in rats?
Wendy Bollag	I am not seeing your slides advance. Is anyone else having this problem? I'm still seeing the slide titled Hypotheses
Mark Santillan	Fred beat me to the question. Maternal separation as a source of stress can have profound changes
Carmen DeMiguel	How about kidney inflammation measures, Lindsey?
Shathiyah Kulandavelu	Great talk. Are you planning to look at older ages?
Anna Stanhewicz	These pups were born at term? IS there a way to assess pre-term responses?
Jessica Bradshaw	I thought the time in the hypoxia chamber was 8 days? Is this correct? If so, how did they receive nutrients? What measurements did you use to determine the continued housing with mother in the control group?
Junie Warrington	@Wendy, try refreshing your page
Frederique Yiannikouris	Hi Mark:)
Lindsey Ramirez	We didn't see any differences in blood pressure from separated and non-separated control animals. We also selected a separation time that is supposed to be consistent with dams hunting in the wild and is considered safe.
Frank Spradley	great question, Anna!
Anna Stanhewicz	ha ha just saw yours!
Wendy Bollag	@Junie, thanks, that worked
Anna Stanhewicz	you beat me to it!
Mark Santillan	Hi Fred :)
Frank Spradley	hahaha
Eman Gohar	Slides are proceeding.. we are in clinical relevance slide, Wendy

Brandi Wynne	Really fabulous talk!
Brandon McFarlin	Nice talk!
Lindsey Ramirez	You're right! Pup temperature is a very important consideration. We couldn't put a heating pad in the hypoxia chamber, but we used a heating bottle. We placed warm water in the bottle and placed the pups on top.
Carmen DeMiguel	Fantastic talk, Lindsey!
Justin Grobe	Thank you for an exciting first presentation of the session!
Junie Warrington	Great presentation!
Wendy Bollag	Lindsey, great talk!
Barbara Alexander	Great talk Lindsey!
J CUNNINGHAM	Great presentation. Do you plan to look at CNS angiotensin receptors?
Jessica Faulkner	Nice talk Lindsey!
Eman Gohar	Very nice work, Lindsey
Styliani Goulopoulou	Nice job, Lindsey!
Ellen Gillis	Great talk Lindsey!
Daria Ilatovskaya	Excellent talk, Lindsey!
Mark Santillan	Jean Regal!
Pablo Nakagawa	nice work!
Mark Santillan	Nice job Lindsey!
Frederique Yiannikouris	Great talk!
Noha Shawky	Great talk
Lindsey Ramirez	Do you think the hypoxia could have caused a stress response when weaning these animals? We did not test any behavioral measurements, but physically, pups that were in the hypoxia chamber were similar to controls. They gained weight similarly, ate, drank, and urinated similarly. We have not taken any microbiota measurements though.
Lindsey Ramirez	We do not think that these animals were affected by maternal separation, but you bring up a good point. Typically the pups in maternal separation studies are separated four hours a day over several days.
Lindsey Ramirez	We have not measured cortisol levels in these animals!
Styliani Goulopoulou	Jean, how the development of beta cells in rodents compare to humans (timing)?
Mark Santillan	Lindsey, do you have plasma from the pups... then you could dig in to lots of stress responses...
Jean Regal	In rats beta cell development continues to postnatal day 20-30.
Styliani Goulopoulou	Thank you, this is very interesting work!

Anna Stanhewicz	How many days postnatal do you see differences in circulating sex hormones?
Styliani Goulopoulou	Jean: have you or anybody challenge rat pups in early life and if yes, were there any sex differences in beta cells?
Lindsey Ramirez	Yes, when we were looking for models of preterm birth, we found some using LPS, but we were concerned that the LPS- induced inflammation might make it a more complicated question. Some others were targetting the brain and they cut off blood flow in the carotid arteries.
Jean Regal	Not that I am aware of. We just know that there are fewer beta cells in the female RUPP offspring.
Frank Spradley	thanks lindsey. nice talk.
Mark Santillan	Loving your talk Jean... also good to e-see you. Outside of your work in complement, do you think this trans generational programming of DM predominantly Complement driven?
Lindsey Ramirez	Definitely, maternal separation can have a profound affect on blood pressure, but these animals were only separated for around 20 minutes a day from their mother. Many pups separated from their mothers in the maternal separation literature are separated for hours a day so we do not think maternal separation could have an affect.
Lindsey Ramirez	Kidney inflammation is a good question! We measured pan Tcells, Tregs, and Th17 cells in their kidneys and are currently quantifying the results!
Sumit Monu	When you clip the aorta in mother, how large the blood pressure in the mother? I was just wondering if the effect you see is due to maternal hypertension or decreased blood flow to the placenta..
Carmen DeMiguel	Thank you! Looking forward to those results!
Jean Regal	We are finding complement differences and are trying to do the right experiments to decide if complement (or macrophages) makes any difference.
Lindsey Ramirez	Thank you! We did not have plans right now to study older animals right now. We have a lot of tissue from these sets of animals, but I would be interested to see if age has any affect.
Pablo Nakagawa	In line with Sumit, any change in perfusion to the pancreas?
Jean Regal	Our blood pressure increase in the mother measured at gestation day 19 is about a 15 mm Hg increase.
Justin Grobe	Thank you for a great presentation, Dr. Regal!
Barbara Alexander	Granger JP, LaMarca B, and George E have used the RUPP model extensively, you can check out their studies in regards to BP. Be aware that vendor differences alter BP response to RUPP.
Styliani Goulopoulou	Great presentation, Jean!

Mark Santillan	Thanks Jean... well done Dr. Regal!
Frank Spradley	jean, are you planning on putting these offspring on high-fat diet? that might exacerbate the islet abnormalities? thanks for your talk.
Jessica Faulkner	Hi Dr Regal, nice talk, were there any changes in immune cytokines in the pancreas of your males v females?
Barbara Alexander	Great Talk Jean! Do you see a delay in insulin release in response to a glucose challenge in the fasted state?
Lindsey Ramirez	Jessica- Good question! These animals were separated at 20 minute intervals during the 8 day period. The rest of the time they remained in the home cage.
Jean Regal	Very good points. We have not looked at pancreatic perfusion in the RUPP model. The mothers pancreatic beta cell mass is not changed, just the offspring.
Carmen DeMiguel	Great talk, Dr. Regal!
Jean Regal	Still many things to evaluate, including cytokines and glucose challenge of the offspring.
Ellen Gillis	Nice talk Dr Regal!
Lindsey Ramirez	Junie- Yes these pups were born at term. Are you wondering if we could perform measurements of these animals while still in utero? I had not thought about that and I am not sure if there is something we can measure. Do you know of any techniques?
Jean Regal	We are also evaluating complement changes in the various fat depots in the pups.
Lindsey Ramirez	Thank you so much everybody! Sorry about the delay. Typing answers is slower than I thought!
Lindsey Ramirez	J Cunningham- Great question! I actually have some brains preserved in formalin and some flash frozen in the -80C freezer. I haven't researched it yet, but I wonder if there are good IHC or western antibodies for rat tissue. Thank you.
Eman Gohar	Could the BP increase you see in the long term (after 10 years) be related to reaching menopause?
Junie Warrington	Interesting that IL-17 is reduced postpartum.
Sabrina Scroggins	The average age of women in the 8-10 range was still prior to menopause. Although, we do acknowledge this may alter these responses.
Lindsey Ramirez	Mark- I have some trunk blood collected from a subset of pups, but I do not have a big n for each group.
Sumit Monu	It would be nice to see if there is difference in the inflammatory/proinflammatory cytokines between those females that develop hypertension after preeclampsia versus those females that do not develop hypertension after preeclampsia.

Pablo Nakagawa	I am sorry if I missed, but where these cytokines were measured? why is it normalized by grams?
Eman Gohar	Ok. Thanks, Sabrina
Sabrina Scroggins	@Junie. This was reduction in IL-17 post-partum was striking to us as well.
Jessica Bradshaw	Lindsey, I would be concerned, as others have stated, about stressors when placing the treatment group inside a chamber (I'm assuming during light cycle?), when your control group is left in the home cage with the mother. Perhaps you could also place the control group in a chamber under normoxic conditions to control for any compounding stressor effects outside of the hypoxia insult?
Styliani Goulopoulou	Sabrina, did these women have any comorbidities after pregnancy (other than HTN)?
Patrick Molina	Are these cytokines measured from plasma or from PBMC?
Sabrina Scroggins	The cytokines are plasma and normalized to total protein
Frank Spradley	did you do flow cytometry? or are those future plans?
Sabrina Scroggins	There were a couple in both groups with diabetes, but overall no major changes. We do still need to increase the sample size for subset analysis
Eman Gohar	May be I missed it, were the number of prior pregnancies a contributing factor?
Styliani Goulopoulou	Thank you, nice work!
Justin Grobe	Thank you for another exciting talk!
Pablo Nakagawa	Have you excluded pregnancies with Rh incompatibility?
Sabrina Scroggins	Flow cytometry and T cell gene expression is future and ongoing, respectively.
Sabrina Scroggins	We would also like to acknowledge and thank Virginia Nuckols and Amy Stroud from Dr. Gary Pierce's lab.
Yvonne Zuchowski	Very interesting talk!
Sabrina Scroggins	Pablo, I do not have the Rh status for these women, but I could look into it further.
Anna Stanhewicz	Nice talk, Sabrina! Do you have any measures of tissue inflammatory factors in these women?
Pablo Nakagawa	Great talk!
Jean Regal	Thank you Sabrina. Nice work.
Lindsey Ramirez	Jessica- That is a good point about the stress from being in the hypoxia chamber and if we run more animals we can consider placing the normoxic group in a chamber at 20% oxygen. Thank you for the suggestion!
Sabrina Scroggins	@Anna, unfortunately, we do not have any tissue measures at this time.
Frederique Yiannikouris	Nice work Sabrina!

Sumit Monu	Great work Dr.Sabrina
Sabrina Scroggins	Thank you all for your questions and feedback.
Junie Warrington	Nice presentation! I would anticipate that there will be changes in inflammatory profiles in different organs &/or tissues especially in those that develop hypertension
Barbara Alexander	Great talk Sabrina. Had of the women in your cohort had an additional pregnancy? Did that alter outcomes. I know you cohort size is small. So glad to see studies in PP PE women.
Junie Warrington	Have you considered doing predictive analyses? Based on pregnancy measurements, are there any factors that predict the development on hypertension postpartum?
Sabrina Scroggins	@Junie. Agreed, circulating immune profiles are often different than tissue/organ specific.
Sabrina Scroggins	@Barb. I do have some of those data and the sample size just wasn't big enough to tease that question out. We do hope to continue building on this study to perform additional co-variate analyses.
Barbara Alexander	Thanks!
Sabrina Scroggins	@ June. I have not considered predictive analyses yet, but other studies have shown the usual suspects are predictive (eg. BMI, cHTN, PreE, etc) are associated. Hopefully as we move this work forward we can identify biomarkers or cellular profiles that may be used alone or in combination for a more-specific predictive value.
Sabrina Scroggins	@Junie, my apologies
Junie Warrington	Thank you, @Sabrina. I was thinking along the lines of predicting which PreE patients will go on to develop hypertension in early vs. late postpartum
Frederique Yiannikouris	Possibly naïve question: Do plasma CRP levels change after 8-10 evaluation post-partum?
Justin Grobe	Thank you for your presentation, Dr. Arif!
Anna Stanhewicz	Along the same lines, @Junie, it might be curious to see how lifestyle factors may contribute (positive or negative) as well
Sabrina Scroggins	@Junie. Large epi studies have addressed the prediction of PP HTN and later HTN development. Our study will hopefully be able to calculate the ROC, sensitivity, and specificity to apply to predictive models.
Sabrina Scroggins	@Anna, we couldn't agree more and my colleagues are addressing lifestyle and environmental factors in ongoing studies.
Lindsey Ramirez	Did you take any information on menstrual cycle?
Sumit Monu	Did you exclude the genetic predisposition?
Justin Grobe	Thank you for another exciting presentation, Dr. Miyashita!

Sabrina Scroggins	@Lindsay, we can extract that from the EMR from our participants, but our collaborators did not collect that data. Importantly, the age range and menopause status were similar between the normotensive and hypertensive groups.
Frank Spradley	Thank you Dr. Miyashita for a great talk. Very informative!
Joseph Flynn	@Frank - thanks!
Yosuke Miyashita	Thank you everyone!
Megan Suter	Really enjoyed your talk, Dr. Miyashita!
Frank Spradley	Always great to hear from your group, Dr. Flynn!
Styliani Goulopoulou	Dr. Hamdani: have you calculated blood pressure variability in this cohort?
Gilad Hamdani	We have, but haven't analyzed this data yet
Styliani Goulopoulou	Thank you.
Joshua Samuels	Outstanding job, Gilad!
Gilad Hamdani	@Joshua: Thanks!
Styliani Goulopoulou	@Dr. Hamdani: would you expect maturation levels (e.g. Tanner stages) would influence these data?
Justin Grobe	Thank you for a great final presentation of the session, Dr. Hamdani. And thank you to everyone for attending, and for the great feedback for the speakers!
Carmen DeMiguel	Great talk, Dr. Hamdani!
Eman Gohar	Great session, thanks everyone!
Sumit Monu	Great talk Dr.Hamdani
Gilad Hamdani	@Styliani: Most of our cohort was in late adolescents, so presumably not.
Joseph Flynn	@Styliani - it was a relatively narrow age range, so all were probably pubertal
Gilad Hamdani	Thanks everyone!
Jean Regal	Maybe face to face next year.

#### Treating Hypertension in Patients with Co-Morbid Conditions - Case-Based Discussion

name	message
Chris Sampson	Welcome! As you enter the player, you should hear music playing. If you do not, please click the Request Support button. Thank you and enjoy the conference!
Chris Sampson	This session will start at the conclusion of Hypertension Management in the Era of Covid-19: Has the Time for Remote Patient Monitoring of Hypertension Finally Arrived?
Angela Brown	I'm present
Atul Bali	Thank for the delayed start so we don't miss anything!
Angela Brown	Okay, I misspoke: GDMT = guideline directed medical therapy

Angela Brown	therapy
Clarence Grim	Just presented SPRINT results at this meeting strongly support the role of level of BP control <120 is better for patients who meet study criteria.
Aimee Garza	(thumbsup)
Angela Brown	Sorry, I got "goal" stuck in my head
Jackson Wright	< 120 to prevent HF
Lisa Forteschramm	@clarence that was a great talk
Sandra Taler	@Angela - Doing great!
Atul Bali	@Dr. Brown - High dosing frequency for Hydralazine makes nonadherence a major issue in the non-study setting. What has been your experience in this regard?
Jan Basile	Not so sure we have evidence for the diastolic of < 80 but it goes along with the < 130 mm Hg. :)
Sarah Melville	what are the contraindications of SGLT2 inhibitors and antihypertensive medications?
Steven YAROWS	hydralazine has no data on outcomes
Clarence Grim	Time to do ARR in this pt?
Atul Bali	@Dr. Yarows - Dr. Brown had cited the A-HEFT trial for hydralazine + nitrates.
Jan Basile	Hypertension is the most population attributable risk factor for the development of a a fib (Framingham HS)..
Steven YAROWS	@Basile-correct and not appreciated
Clarence Grim	Note low K in both pts. Time for an ARR or adding MCBs?
William Cushman	I'm not aware that any AHT meds were excluded or had negative interaction in primary SGLT2i outcome trials.
Shannon Finks	Me either, Dr. Cushman. :)
Angela Brown	@Sarah - no specific contraindications
Jan Basile	In the LIFE Trial, (those with LVH like this patient) ARBs may be associated with prevention of future A Fib.
Sarah Melville	ok, thank you all, ;)
Angela Brown	Yes, regarding ARBs and association with AFib
Jan Basile	Interesting that this patient was initially cathed for his HF without angina.
Jan Basile	Thanks, Angela!
Gbenga Ogedegbe	Well done @Angela!
Steven YAROWS	that cath would pay for a ton of home bp devices
William Cushman	Great, Angela!
Clarence Grim	Always R/O PA when K low.
Jackson Wright	Nicely done Angela
Angela Brown	Thank you all!

Lisa Forteschramm	Thank you @angela!
Steven YAROWS	Thanks Angela
Clarence Grim	Thanks A
Claudia Fotzeu	@Dr Brown, Just to clarify. if the patient was on CCBs prior to HT onset it should be discontinued right?
Claudia Fotzeu	HF onset
Steven YAROWS	Likely losartan not the most potent ARB
Sarah Melville	Thank you, Dr. Brown, for your great presentation, ;)
Clarence Grim	Edema should always trigger an assessment of Na intake. As in measuring urine Na.
JBrian Byrd	Is this RHTN with a consequence of decreased GFR? Or decreased GFR with a consequence of RHTN? :thinking_face:
Angela Brown	Yes, particularly if HFReEF; BP control key with HFpEF so will likely still be needed
Maya Rao	@Jbrian probably both
JBrian Byrd	Yea. The most sensible answer.
Claudia Fotzeu	Thank you Dr. Brown
Clarence Grim	Curious that no guidelines for lowering Na intake?
Maya Rao	no question in CKD lots of data to show low Na diet leads to lower BP, as we all know easy to say, hard to do
Steven YAROWS	Clarence, this meeting should have been in New Orleans, not possible to lower Na intake!
Clarence Grim	Not hard if you monitor urine Na and feed back to patient and find out where the salt is coming from.
JBrian Byrd	@Maya: to what extent should we expect aldosteronism (primary or secondary) in CKD? If secondary, should we expect it to lead to tissue fibrosis as occurs in primary aldosteronism + high sodium diet?
Maya Rao	of course mr2971@cumc.columbia.edu
Clarence Grim	Not easy either but doable.
JBrian Byrd	And as occurs in the secondary aldosteronism of HF
Maya Rao	Yes it is coming in a few slides but as GFR goes down aldo levels increase
Clarence Grim	Need to measure both renin and aldo.
JBrian Byrd	Thanks. How do you think about the literature on MRAs in patients with CKD? With ESRD?
Clarence Grim	Low Na diet also reduces proteinuria.
Maya Rao	very limited data i will go through it in a second i think but what there is looks pretty good w the risk of hyperkalemia of course
Maya Rao	ESRD even less data, small studies show good results for HTN
Steven YAROWS	I have noted improvement in GFR a few years after controlling bp despite using ARB/ACE

JBrian Byrd	Remarkably good, I would say
JBrian Byrd	Surprisingly good, maybe
Clarence Grim	This is likely a result of any way to lower BP. Even aldomet worked years ago.
Maya Rao	yes i agree, even in ESRD concerns for hyperkalemia though because of blockade at the intestine which is revved up in ESRD in terms of getting rid of K
JBrian Byrd	This article mentions a mortality benefit seen in one study. Need replication: <a href="https://www.karger.com/Article/FullText/441262">https://www.karger.com/Article/FullText/441262</a>
JBrian Byrd	Thanks for sharing this reference, @Maya. <a href="https://pubmed.ncbi.nlm.nih.gov/7043053/">https://pubmed.ncbi.nlm.nih.gov/7043053/</a>
Clarence Grim	Aldosterone always needs excess salt to do its damage. So why not lower Na intake first?
Maya Rao	thanks for the references!
Maya Rao	i totally agree on low Na diet. I practice in inner city NYC, there are a lot of challenges in our community to having people follow a low Na diet. But there have been some good studies showing clear benefit as much as you would get from a drug
Atul Bali	@Dr. Grim - Absolutely. The effect is remarkable in patients with monogenic hypertension
Clarence Grim	Remarkable in those who are DASH sensitive as well
Atul Bali	Dr. Rao - Do you maintain thiazides in CKD stage 4, or do you switch to long acting loop diuretics (Torsemide)?
Jan Basile	In this patient with eGFR > 25 and clinical proteinuria, what about the use of an SGLT2 inhibitor to improve renal function and reduce proteinuria?
Clarence Grim	I work on Na intake first.
Maya Rao	the teaching has always been thiazides are less effective at a GFR < 30 but it turns out this may not be true, there are data showing effectiveness even in advanced CKD. so i used it until i see it isn't effective ie edema or worsening HTN and then switch
Maya Rao	@Jan yes technically the GFR < 30 which is a c/i to start it, but i agree this really is the most exciting thing in CKD now in terms of renal protection
William Cushman	what about adding loop to chlorthalidone rather than switching?
Steven YAROWS	What about switching losartan to olmesartan? It is more potent and longer 1/2 life
Maya Rao	@william you can do this but I have seen AKI from essentially a pre-renal effect so i only do this when they are not responsive to high dose loop
Maya Rao	i also like to add the low dose MRA, combo works well
Maya Rao	@steven, yes i agree

Atul Bali	"...even if creatinine increases" - such an important point.
Jan Basile	Use losartan at 50 bid rather than 100 mg qd. Olmesartan has that sprue-like enteropathy concern? No?
Maya Rao	yeah i am the first to say the heart trumps the kidney... euvoelmia is more important than the creatinine
Steven YAROWS	I've never seen the sprue effect
Joseph Young	As an anti-hypertensive, with regard to loop diuretics, torsemide has longer half life than furosemide and I find more useful
Angela Brown	@Maya - Very helpful comments on management.....thank you.
Clarence Grim	Nice review Dr.Rao. Recommend you work on lowering Na intake more. Many are more willing to change diet rather that taking more meds than in the old days.
Jan Basile	No, but the lawyers have!
Maya Rao	@joesph, totally agree, i switch pretty quickly to torsemide
Joseph Young	Very nice presenentation - thanks.
Jan Basile	Great, thank you.
Maya Rao	thanks for all the great questions and comments!
Angela Brown	I've seen the sprue-like effect in several patients.
Atul Bali	Thank you Dr. Rao!
JBrian Byrd	Thank you, @Maya!
Angela Brown	Wonderful presentation - @Dr. Rao
Clarence Grim	Low K, time for an ARR.
JBrian Byrd	@Clarence, too true. I will be speaking on when to screen for primary aldosteronism tomorrow at 10 AM
JBrian Byrd	Or in a 10 AM session, in any event
Clarence Grim	I have good results by moving these pts to DASH eating plan and monitoring urine Na/K.
Steven YAROWS	I don't like increasing inhalers with smokers. Dyspnea makes them quit smoking
Clarence Grim	To JBrian Byrd. I will be there I hope.
JBrian Byrd	Thanks--I am rounding in the morning, but I will attempt to be in the chat
Clarence Grim	CCBs tend to make the feet swell which bothers many women...and men.
Jan Basile	Thank you and congrats on your NEJM paper!!
Shannon Finks	Thank you @Jan!
Clarence Grim	find out the cause of the low K. not always diuretics.
Clarence Grim	Nice update.
Fernando Elijovich	Alveolar fluid formation outruns the capacity of the alveolar ENaC to clear it in COPD. Therefore, I wonder whether amiloride worsens this

Atul Bali	Patiently waiting for an ARB to appear on the Walmart \$4 list, so I can start using it without hesitation.
Shannon Finks	Try GoodRx. Not \$4, but definitely affordable, even in combination AHT
Shannon Finks	Kroger also now has a membership program with an annual fee but patient gets the generic agents at cost. Another affordable option.
Jan Basile	What did DDI stand for earlier in your slide?
Shannon Finks	Drug-Drug interactions
Jan Basile	Thank you and thank you for your presentation. Perfect for our primary care specialty session!
Claudia Fotzeu	Agree @Jan Basile
Shannon Finks	So welcome! :) Delighted to be invited.
Atul Bali	Could you provide a citation for harm resulting from use of non-cardioselective beta blockers in COPD? I thought there was some controversy in this regard.
Angela Brown	another outstanding presentation! @Dr. Finks
Shannon Finks	Thank you @Dr. Brown! Dr. Ball, pull our NEJM paper for references. I won't be able to respond live as quickly as needed.
Sarah Melville	Dr. Grim, great case-based review of PA screening by Dr. Byrd here: <a href="https://pubmed.ncbi.nlm.nih.gov/30359120/">https://pubmed.ncbi.nlm.nih.gov/30359120/</a>
Ileana Spizzirri	we should avoid Verapamil/betablockers
Sumit Monu	Great talk Dr.Shannon
William Cushman	Great job, Shannon!
JBrian Byrd	<a href="https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)30069-1/fulltext">https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)30069-1/fulltext</a>
Atul Bali	@Dr. Finks - Thank you so much
JBrian Byrd	Of potential interest ^
Lisa Forteschramm	outstanding presentation. this whole session was time well spent!
JBrian Byrd	Thanks, @Dr. Finks
Jeffrey Bates	Fantastic talk! Thx!
Romsai Boonyasai	Great session!