Moderator Rachel Breidster: Hello and welcome to Public Health Live, the third Thursday Breakfast Broadcast. I am Rachel Breidster, and I will be your monitor. Before we get started I would like to ask that you fill out your online evaluation at the end of the broadcast. Continuing education credits are available after you take our short post-test and your feedback is helpful in planning future programs. I also want to let you know, the planners and presenters of Public Health Live, do not have any financial arrangements or affiliations with commercial entities whose products, research, or services may be discussed in this activity. And no commercial funding has been accepted for this activity. As for today’s program, we will be taking your questions throughout the hour by phone at 1(518)880-3516 or via email PHLIVENY@gmail.com. Today’s program is Hiding in Plain Sight: Finding Patients with Undiagnosed Hypertension. Our speakers are Ms. Hilary Wall, a Senior Health Scientist at the Center of Disease Control and Prevention’s Division for Heart Disease and Stroke prevention. And Ms. Sandy Cafarchio, the Executive Director of Health Center Network of New York State. Welcome to the Program.

Moderator: Good morning and thank you both so much for being here today.

Sandy Cafarchio: Good morning Rachel.

Hilary Wall: Good morning.

Moderator: Now to get us started today, Hilary would you start by just telling us a little bit about what we hope to accomplish on today’s program?

Wall: Sure. So today we are going to talk about the Millions Hearts Initiative and its long term goal and strategies that we’re using for that initiative. We’re going to explain the health risks associated with undiagnosed hypertension, and then describe a four-step process that clinicians and health systems can use to find patients with possible undiagnosed hypertension.

Moderator: Great, thank you. Now to set the stage for the discussion that we’re going to be having over the next hour can you talk about the burden of heart disease and stroke within the United States?
Wall: Absolutely. So over the last 40 years or so, we’ve seen a gradual decline in cardiovascular death, which is great. But it still remains the leading cause of death for men and women of all races and ethnicity and is responsible for about 1/3 of deaths worldwide. Each year we have about 1.5 million heart attacks and strokes in this country. And there are 800,000 deaths associated with those conditions. And cardiovascular disease is the leading cause of preventable deaths, so for people under the age of 65. And the cost to our country related to cardiovascular disease is large. So it’s estimated that every year about $320 billion dollars are spent on health care costs and lost productivity.

Moderator: So even though we are seeing a decline, clearly it’s still a large burden. What’s being done to address this?

Wall: So back in 2012, the U.S. Department of Health and Human Services launched Million Hearts, which is a national initiative with a long-term goal of preventing one million heart attacks and strokes by 2017. It’s co-led by my agency, the Center for Disease Control and Prevention and the Centers for Medicare and Medicaid Services or (CMS). But we know in order to meet that very audacious goal, we must rely on the work that’s done by state and local departments of health, clinicians, community based organizations, really because they’re doing the most effective work.

Moderator: So what exactly does the Millions Hearts Initiative entail?

Wall: So Million Hearts has two sides to it. In the community we are trying to keep healthy people healthy by reducing sodium and eliminating artificial trans-fat in our food supply. We’re also trying to reduce the prevalence of tobacco use through tactics like smoke free laws. But we’re also trying to improve the quality of care delivered for people who need cardiovascular disease related care. We’re doing that by harnessing the power of health information technology, recognizing and rewarding clinical innovations, and then focusing health systems and providers on most effective levels for cardiovascular disease prevention, what we call the ABCS.

Moderator: The ABCS sound like probably a simple message. Can you talk to us about what that might be?

Wall: The ABCS are Aspirin when appropriate, Blood pressure control, Cholesterol management, and Smoking cessation.

Moderator: Now another component of the Million Hearts Initiative that you mentioned is the health information and technology. Does that have to do with electronic health records?

Wall: Yes. So I think we’re all very lucky to be living in this world where technology is quickly changing. And in health care, that is where all the electronic health records really come in. So through Million Hearts, we are looking to optimize those systems, through things effective and judicious clinical decision support tools, exploring the role that patient
portals can play, and promoting bi-directional E-referrals systems that can link clinicians and their patients to the community based services that they might need.

**Moderator:** Excellent. Now has the Million Hearts Initiative prioritized any of those ABCS that you mentioned?

**Wall:** We have. We put a lot of emphasis on the blood pressure control piece, because it has a high prevalence in the U.S., and great potential to impact heart attacks and strokes. So we’ve estimated that in order to achieve our Million Hearts goal of preventing a million heart attacks and strokes, we need to get 10 million more people with hypertension under control. So in the U.S. our primary data source for looking at hypertension prevalence is known as the National Health and Nutrition Examination Survey or NHANES. And this is a large nationally representative cross-sectional survey of really the non-institutionalized population. And it’s very unique in that it combines interviews with physical examinations. And so when we look at data from the most recent cycle, which is 2013-2014, we see that 32% of adults in the United States have hypertension right now. That’s 1 in 3 people or 75 million people. So it’s a really big problem. And when we look at sub-populations, the prevalence can be even higher. So we see 40% in non-Hispanic blacks and up to 70% prevalence in our older adults. So we know that people with hypertension are about 4 times more likely to die from stroke, and 3 times more likely to die from heart disease than people who don’t have hypertension.

**Moderator:** Those numbers are pretty staggering. You mentioned 75 million people, are all those people receiving adequate treatment for the condition?

**Wall:** Unfortunately no. Of the 75 million people with hypertension, about 35 million of those are uncontrolled, meaning that their blood pressure is not at a safe level. And so they remain at increased risk for adverse events. And in NHANES, participants are asked if they have been told by a health care professional that they have hypertension? And right now for people who are aware that they say yes, I have been told that I have hypertension despite their treatment status, whether or not they’re on anti-hypertensive medications, we know how to bring those people under control. There are evidence-based strategies to do that. But the group that I want to focus on today is the 12 million people who are unaware that they have hypertension. So that means they report never having been told by a health care provider they have hypertension, they’re not taking an anti-hypertensive medication, but yet they have measured high blood pressure.

**Moderator:** And of those 12 million people who are unaware of their hypertension, are those, do those tend to be people who are primarily uninsured populations?

**Wall:** Well I think that’s easy to assume that they are among the uninsured who don’t access the health care system, and therefore, haven’t been given the opportunity for detection and diagnosis. But I am a data driven person, and so we look at the data, we see that over 80% have health insurance. And over 80% are regularly accessing care. And of that 12 million people who are unaware of their hypertension, 63% report having seen a health care
provider two or more times in the past year. So just that 63% of the 12 million is about 7 million Americans adults who are regularly accessing the health care system, but whose hypertension has not been diagnosed, treated, or controlled.

**Moderator:** Now, you mention data from nation surveillance systems. What does that mean for health care systems?

**Wall:** So right now Million Hearts and a number of what we call quality reporting initiatives are things like the Medicare, electronic health care record incentive programs, the CMS physician quality reporting system. We are all judging the quality of care delivered by clinicians to hypertensive patients using a clinical quality measure known as NQF 18 or close measure analogs. And that measure is essentially the percent of patients’ ages 18 to 85 who have a diagnosis of hypertension and whose most recent blood pressure is under 140/90 during the measurement year. So in order to be included in those quality measures, a patient must have a diagnosis of hypertension, so by default clinicians are being judged on how well they treat patients with diagnosed hypertension. So those are people who are likely among that aware group from the NHANES data we looked at earlier. They’ve been told by a health care professional that they have hypertension, they’re on an anti-hypertensive medication. So these measures just by default, overlook the potentially undiagnosed hypertensive population.

**Moderator:** And why is it so important that we start finding the folks who are unaware?

**Wall:** So let’s take a practice that has 100 adults with diagnosed hypertension. So let’s say 70 of those adults have their most recent blood pressure under 140/90 in that safe zone. That would be a blood control rate for that practice of 70%. Which would be great, we would celebrate that. But what if that same practice, if we took a closer look at the patient population and what if we found that they had 50 patients with multiple abnormal blood pressure values? So above that 1410/90 value. If we included all of those patients in our measure of blood pressure control, particularly if they didn’t have that diagnosis of hypertension, and if we included all of them in that clinical quality measure, that would have a tremendous impact on the blood pressure control rate of the practice. Their control rate could go from 70% down to 47% control. And so obviously, that is really the worst case scenario. It is not necessarily true that all 50 of those patients would have hypertension, but the phenomenon is real. And it is something that we need to pay attention to. And we know through Million Hearts that we have found that it’s not unusual for large health care systems to find a large number of people with hypertension among that undiagnosed cohort. So systems like Kaiser and Gaisenger have found this to be true for them. And if it’s true in these large, closed, well organized systems, it is likely happening all across our country.

**Moderator:** Absolutely. Now, what has the Million Hearts initiative done to try to draw attention to this issue?
Wall: So back in November of 2014 we published a viewpoint in JAMA that tried to summarize what was happening in the scientific literature in this area. So we captured what large systems had done to find undiagnosed hypertensives. What was interesting is that each one had done this kind of data exploration a little bit differently, so there really is no one right way to do this kind of work. We have also since then developed a number of resources that I can talk about a little bit later.

Moderator: Now in the studies that you referenced did you find some commonalities that would be useful for folks who are trying to enhance or implement their efforts to identify those folks who are undiagnosed?

Wall: We did. As we were doing the research for the JAMA perspective, we tried to look for common themes, and then we turn those into a four step process that we thought could be used by other health systems who are looking to do this kind of work. And then implementing a plan to confirm whether or not those patients actually have hypertension.

Moderator: Now do you ever have a hard time convincing local providers that they should look at their practices in this way?

Wall: So I do and I now I’ve heard this same issue our state and local department of health who are trying to do this work. And I think a lot of practices think they don’t have this problem. Or they have never thought to explore it.

Moderator: And is there an easy way for practices to then determine if it is actually an issue for them?

Wall: Yes. We have a few ways. I said earlier in our country we have a 32% hypertension prevalence. And so I always encourage practices and health centers to calculate their practices’ hypertension prevalence. And you can easily do that by taking the number of adults with diagnosed hypertension diving it by the number of adults in the entire practice and multiplying by 100. If those two values are really different especially if the practice’s hypertension program is much lower than the national rate, they are likely missing some patients. There is likely patients with undiagnosed hypertension. But I definitely have heard that the nation average isn’t very representative of a specific patient population. So we took this a step further and developed a hypertension prevalence estimator tool that allows health care settings to take characteristics of their patient population, age, sex, gender, co-morbid condition status, and plug those characteristics into this tool, and it will generate an expected hypertension prevalence. Again if it is very different from your calculated hypertension prevalence, you might be missing some patients.

Moderator: Sure. That sounds excellent. Now what is the most pressing questions that you get from local public health and health care providers as they approach this challenge of trying to find these folks?
Wall: Well, everybody wants to know, how do we do it? What are the clinical criteria that we should use? And there just really isn’t one answer. So to search for patient who might have undiagnosed hypertension, clinicians from practice should determine the definitions for how they would summarize a patient with probable hypertension. And this could be based on the clinical guideline that are followed by the practice, but it’s really about how many elevated blood pressure readings and to what degree of elevation would make someone have probably hypertension. And you really need to select what works best for your practice based on resources and capacity, but there are a few little tidbits I would recommend, keeping people limited to adults ages 18 to 85. Excluding patients with end stage renal disease or women who might be pregnant. And one tidbit I learned from a physician in the field who was doing this work is, you need to make sure the patients haven’t passed away. So that you are not following up with those patients.

Moderator: Absolutely. Now how does health information technology come into play with this? What about electronic health records?

Wall: Yes, so once clinics and health centers determine their clinical criteria, they need to apply that to their electronic health record. And this can be done in a number of different ways. So they may have registry functionality built into their electronic health record that will allow them to generate like a customized report, which would be great. But not everyone has that. Some practices if they’re very lucky, they might informatics staff who have the skills to do computer programming and build some of this into their electronic health record. Or clinics and physicians may have to reach out to the electronic health record vendor to try to generate a special report on this. But there are also some what we call third party population health management software solutions. Things like I2I’s, Trax, Azarah drives, there’s an open source version called pop health. And these software solutions can help practices do this kind of data exploration.

Moderator: Excellent. Now, the next step, step four, relates to the information that is produced. And what then are the actions that you tell providers to do with that information?

Wall: So once you have searched your electronic health record and come up with this cohort of patients, you need to design a care pathway to actually confirm whether or not the patients have hypertension. There are a number of different ways that a practice of health center could do that. We have a 24-hour ambulatory blood pressure monitoring, which is where a patient is fitted with a blood pressure cuff and it takes a number of values in a 24-hour period. And those are then interpreted by the clinician. We have self-measure blood pressure monitoring, which is also known as home blood pressure monitoring where the patient checks their own blood pressure values at home. We have automated office blood pressure machines, which are machines that would be in the office and they go through a protocol of blood pressure readings. And they help to eliminate white coat hypertension. Or if neither of the three options are very feasible, repeated high quality in office measures can also be a way to confirm that patients have hypertension.
Moderator: Great. Now listen to this, it seems like a lot of work and so I’m wondering what advice or guidance would you share with local health care providers, local health departments, about how to deal with what might seem like an overwhelming task?

Wall: Yeah, there is no doubt that physicians and all clinicians are extremely busy. So I really recommend that they start small. This is a quality improvement strategy, and so it behooves health settings to start very small. With what I would refer to as conservative clinical criteria. So for example, looking for patients who have one blood pressure value of 180/100 or 180/120, which is quite high. Once they, when you have more conservative clinical criteria like that, they tend to have what we refer to as a high positive predictive value. That just basically means that the criteria are more likely to call out someone who actually has hypertension.

Moderator: Sure.

Wall: So if you can pick clinical criteria that has a higher positive predictive value, you won’t be wasting resources, bringing large number of patients back in who don’t actually have hypertension. And then once you start with a very conservative criterion, you expand that. So you go through the four step cycle, find some patients, you confirm your patients, and then you can expand the clinical criteria maybe to one value of 160/100 and so forth. So the alternative to this is you could start very liberally with your criteria looking at two or more blood pressure values over 140/90 and then use a more conservative set of criteria to prioritize how you bring those patients back in for confirmation.

Moderator: Sure. Now, what else have you found to be helpful in terms of working with local providers and around the importance and the benefit of using this approach?

Wall: So as practices work through what I call this cascade of finding patients with potentially undiagnosed hypertension and then bringing them back in for confirmation and then bringing them to control, I think really behooves them to make that process as efficient as possible. And patients will be for of lost along each step of that cascade. So for example, you will find patients with potentially undiagnosed hypertension. You’ll lose some of the patients who are unable to be brought back in for confirmation. And of those, you’re able to be brought back in for confirmation and you’ll lose some who don’t have hypertension. Maybe they are pre-hypertensive. And of the patients with confirmed hypertension, you may lose some who you aren’t yet able to get under control. So wisely choosing those clinical criteria when starting the cascade can really help promote efficiency.

Moderator: Wonderful. Well thank you so much for setting the stage for our conversation today.

Wall: Sure.
Moderator: Now Sandy, we want to hear specifically about what’s been happening in New York State. And so can you tell us a little bit about your agency and the work you do?

Cafarchio: Sure. The Health Center Network of New York, referred to as HCNNY or simply the network, is a not-for-profit health center-controlled network that’s purpose is to advance health information management capability of health centers. So when we think about health information management, it’s certainly the nuts and bolts of EHR and the resulting data, but it’s also about peer sharing opportunities to really help health centers put their EHR systems into action. So we, the health centers that we serve are all federally qualified health care services, FQHCs and that means among other things that they provide primary care services to vulnerable populations and that they manage ongoing quality improvement programs. So what that relates to specifically in relation to our work with undiagnosed hypertension is that we facilitate peer collaborative forums through which providers stay abreast of the evidence. They establish mutually supportive collaborative guidelines, and they share intervention strategies and results. And then we produce analytic solutions that help centers identify those patients potentially hiding in plain sight, and to measure prevalence of undiagnosed hypertension. I think it’s important to point out that all of the health centers we work with use the same EHR system, and the same third party analytics solution, so all of the health center staff and the network staff really speak the same language. When we’re talking about EHR work flows and reporting in relation to quality improvement, and that’s just really a huge benefit.

Moderator: Yeah, it seems like that would be.

Wall: And so sandy, those analytic solutions that you mentioned, are those like the population health management software products that I was talking about?

Cafarchio: They are and within the network and the health centers that we work with, we use the Bridget system to do our analytics.

Wall: Okay. Great.

Moderator: Now how does the HCNNY network approach quality improvement?

Wall: Sure. So quality improvement is at the core of nearly everything we do, but we engage at different levels across the network. So clinical and quality leaders of the 22 FQHCs that we serve meet monthly to share education, successes and challenges with chronic disease management and prevention. And there’s a core set of clinical outcome measures that we produce to support that work. And that education and peer experience and the data measurements that are provided in that forum really support the health center’s internal quality improvement initiatives. And then deeper engagement occurs when the learning collaboratives that we manage like those shown here for Million Hearts and health system collaborative, both which had a focus on hypertension control and undiagnosed
hypertension. So we launched a Million Hearts project nearly three years ago that centered around 9,000 patients who were all in the age range of hypertensive measurement. And that work became the foundation for the health system learning collaborative project, which is our current project in partnership with the New York State Department of Health and local health departments and then the learning and the measurements from both of those projects have eventually spread and are now impacting 216,000 patients in the hypertensive age range across the network that are actually diagnosed and we’re monitoring.

**Moderator:** That sounds excellent. Now through all the efforts that you’ve discussed, how have you approached that four step process that Hilary outlined for us earlier?

**Cafarchio:** Sure. So really we did follow the same four steps. Initially we compared hypertension prevalence with state and national data. So as we can see here in our New York State health systems collaborative, our prevalence is slightly higher at 37% than it is across the entire network at 26%. And when compared with data that FQHCs reported to HRSA for 2014, the New York State health systems project centers have a prevalence rate nearly double that of the state FQHCs. And then stepping back even further, the network rate of hypertension prevalence at 26% is slightly higher than the national FQHC prevalence rate of 23%.

**Moderator:** So then moving on to the second step, what happens in these sites when we’re moving on to step two of the process?

**Cafarchio:** Right. So next step is to review the available evidence and the criteria that other health systems have used in similar projects. And then we worked with our clinical champions to establish a standard definition that health centers would really embrace to identify and measure undiagnosed hypertension. And the providers wanted it to be simple, yet effective, broad enough to capture those legitimately at risk, but narrow enough to eliminate patients who may have had elevated blood pressure readings, but only a single instance.

**Moderator:** Sure.

**Wall:** So if I saw my primary doctor and the blood pressure was elevated, and then six months later, I returned to the health center and see my dentist and my blood pressure is
elevated then also, I would now appear on this registry of potentially undiagnosed patients, whereas previously I wouldn’t be because of the requirement for the two medical care services.

Moderator: Excellent. Now was it difficult for your sites to find and use the electronic health record data?

Cafarchio: You know, there certainly were challenges, but fortunately, we worked through them quickly. You know, though it may sound simple, one of the largest hurdles was establishing a standard work flow in the HER where health centers would define a clinically relevant blood pressure. So that that means is when there is a multiple blood pressures recorded in one visit, what's the blood pressure that the provider deemed as the one right? The one they are making clinical decisions off of. And so once we worked through that, I would say it was about a three month process and you know reviewing the evidence, establishing the criteria, working through the workflows until we could actually produce an undiagnosed registry for patient identification and outcome reports for measurement of prevalence.

Moderator: And so, how are you able to establish that standard workflow? That is probably the million dollar question.

Cafarchio: Yeah, it’s always a fun process. And you know, for that workflow in particular and so many other, it really centers around three primary questions. So how, where, and why are you documenting it today? What is the realm of possibility within the HR functionality that you have? And three can we all agree to do it the same way, the best way? Can we agree that there is a best way? So you know, it started with conversations with the health centers. Why do you do it? And do you do it this way for a really good reason? Cause that’s important. Sometimes they have a process they love. And then we mined the data so that we could present what was really happening because sometimes that is different than what people think is happening. And then as network staff, we brushed up on our EHR expertise to make sure that we could recommend the absolute best workflow in light of what we knew about what the centers needed to accomplish and what other features the EHR supports so that it really could be the best. And so we present and communicate all that with the clinical champions over the course of a couple action periods calls. And we came to agreement on a very standard way that this would be done. And then course, that is the easy part. The health centers then have to go train all of their staff on yet one more new workflow. Click here, not there. That’s the real challenge.

Moderator: Well so in doing all this work, what have you learned about provider's motivation on this issue?

Cafarchio: Yeah you know interestingly, though the prevalence rates that we’re finding of diagnosed hypertension are low compared to national estimates, our providers are really motivated to implement and monitor standard protocols to insure that no patient in unaware
of dangerous blood pressure. So the New York State health systems collaborative set out 15 months ago to decrease its already low rate by 20%. And as of December 2015, had achieved a 19.7% average reduction rate of undiagnosed hypertension. So high fives all around for that.

**Moderator:** Absolutely.

**Cafarchio:** Yeah unfortunately, across the larger network where there is not a structured QI project with undiagnosed hypertension as a focus, we’ve seen less than 1% improvement in undiagnosed hypertension rates in that same time period virtually. So I think that really speaks to the value that undertaking a structured quality improvement project can bring.

**Wall:** Absolutely.

**Moderator:** Now, what steps have the providers taken to lower the rate? Because clearly they have done a great job in the networks you mentioned. So what steps have they specifically taken?

**Cafarchio:** Sure.

So for this effort, centers started by forming improvement teams and unique to the Million Hearts and health systems collaborative projects, those teams include local health department staff members, and so further supported by the New York State Department of Health through action period calls. And so the teams identify and tested small changes for impact. And spread the successful changes throughout the health centers. They worked really hard to develop outreach plans for the undiagnosed patients to bring those back in for follow up, and also worked to brush up, I’ll say on office visit protocols to stem the tide of patients that are actually leaving the health center as an undiagnosed patient.

**Moderator:** Excellent.

**Wall:** So Sandy, you mentioned monthly action period calls with the New York State Department of Health. What did those entail?

**Cafarchio:** Sure. So those are pretty structured calls, and I got to tell you the team we work with here at the state department of health has been great. They really do a lot of our evidence research and present and discuss that with the team. The department of health staff are valuable participants in those calls making suggestions, asking the right questions to make sure people are sharing the really important pieces that we all need to learn from. And like I said they always have good suggestions on pathways we might pursue and the local health department provides additional resources as they can beyond project funding, so they recently licensed access for all the health care center staff to an online blood pressure training module, which we know is so important. And it’s a real key step in the process’ accurate blood pressure technique. And then the department of health is our link to of health is our link to the local health departments, which is another layer of value add, as the
improvement team is forming the state department of health makes contact with the local health department provides an overview of the project and secures their participation. And that local health department team member not only becomes an active participant in this action period call, but they work directly with their health centers to identify areas where they can provide support, whether its community linkages or patient education. They’re being used in various ways across the project. I would say those relationships have kindled slower in some areas than others. Some of the health centers rely heavily on the local health department team members and others are still just trying to figure that out. But you now, I can appreciate stat DOH’s vision for how to leverage public health much more effectively in this way. It’s really exciting to see it coming to fruition.

Moderator: So continuing on to other detail of step four, was there information regarding the electronic health records doing alerts or any other information that was important to share about step hour?

Cafarchio: You know, there really was, there is a couple of other key steps. EHR alerts is key, making sure that you are maximizing the alert functionality that you have. And of course as always we’re trying to avoid alert fatigue. And what is really important versus what might be nice. And probably one of the biggest components is staff education. It probably sounds basic, but a lot of education around the important of identification and treatment, even if there is not a lot of these people in our midst, why is it so important to identify those that are there? Proper blood pressure reading technique and documentation protocols. And then just overall awareness across the health center of the protocol and the expectation for staff adherence that we’re going to do this way, and this is the way it needs to be done.

Moderator: Excellent, thank you. Now to give viewers an eye into what this has actually looked like in practice, we recently visited Dr. Sophia Macinty, a board certified family practice physician at Hudson river health care in Peekskill, NY, which is a federally qualified health care center engaged in HCNNY’s Millions Hearts and health systems collaborative. Let’s take a look.

<<CLIP BEGINS>>

Sophia McIntytre: My name is Sophia McIntyre. And I am a family physician by training and I serve as the Chief of Clinical Quality Physician Leadership Development. Hudson River Health care is a network of 26 community health centers in the mid-Hudson Valley and Suffolk county of New York. We service of 150,000 patients. We’ve had over 500,000 visits. And we just celebrated 40 years of history. And so it’s amazing organization that was founded with four mothers who wanted access to health care in their community. Undiagnosed hypertension was very important clinical measure to follow up on. And partly because we know that if we’re going to have impact on care for our patient, we have to get them in the very early stages of the disease process. And so we want to not only focus on treatment but also preventative care. So undiagnosed hypertension is a perfect opportunity to begin to educate our patients on the potential impact their lifestyle and choices have and
its impact on their health care. So once we develop a registry for patients with undiagnosed hypertension, it allows us to focus on a cohort of patients that we could develop strategies to figure out ways to improve their health. And so that registry was so important because now we knew who the patients were. We could understand what are the characteristics that were similar for these patients. We were able to identify strategies, implement programs with our local department of health. So the way we were able to contact patients that were identified as undiagnosed and have them come back in, it was really a team effort. We had a nurse champion along with Americorps volunteers that were part of the cohort of team members. They managed those list of patients and they would call them anytime there was a change in the medication. They had a visit, and so we really had them to take ownership of those patients. And so they knew each of those patients. There were many challenges in following up with patients in our population and partly because there were social determinants that impacted their care. So although they were very concerned about their health, there were other competing factors, it could be house, it could be food, it could be transportation. And so we had to navigate and understand what are the unique factors that were impacting our inability to contact some patients. And so we communicated with patients and said, so tell us, what are the challenges that you anticipate may be getting in the way of your care? So the improvements that we have seen with our participation with the Million Hearts initiative and improvement in overall control of our hypertension. And so when we set forth in this program, we identified a site that had a hypertension control rate about 58%. And at the end of the project in just one year, we had a 10% improvement in hypertension control. And that was just that one site. And then two years later, we’re able to proudly say that all our sites are above national average for hypertension at 71%. As a clinician, as a family doc, I would first say, you know make sure that your team is comprehensive team because each of the team members are able to contribute such a unique perspective, and also involving your local department of health and community resources because often times when we’re working in our silos of a health center, we’re not really aware of all the community resources that are available. And so starting in the practices knowing that you have extenders that can help and improve the care of your patient. And improve the care of your patient. The other advice I would give when starting a program is be consistent in your communication to your providers and be willing to flex and to adapt to the many issues that may arise. And that is important because we know we have a vision and sometimes that vision has to be adapted to the circumstances and that’s either the circumstances of all patients, of all practice, and the competing demands on our time and attention.

<<CLIP ENDS>>

Moderator: So now, Sandy, Do you have any information measuring the outcome of your health center’s outreach to potentially undiagnosed patients and what that could mean for the entire state of New York?

Cafarchio: We do, some information, yes. We did a small study in 2014 as part of our Million Hearts Project. And though the number of patients we tracked is statistically insignificant, it was an important benefit for the providers at the time. And it is an exercise
we hope to do again soon. We isolated 202 undiagnosed patients and tracked them for a period of five months. And so 116 of them returned for an office visit. And of those, 15 were diagnosed with undiagnosed or excuse me, diagnosed with hypertension. And that represents about 13% of patients who returned. So we could make a major leap based on those outcomes and estimate if the health centers were successful in following up with 57% of the network’s 6,000 undiagnosed patients right now, we could be treating an additional 445 patients to prevent heart attack and stroke.

**Moderator:** That’s a pretty significant number. Now what would you say is the overall hypertension control rates and challenges?

**Cafarchio:** Sure, so you know the steps I’ve outlined here around undiagnosed hypertension are being deployed in various degrees across the network aimed at hypertension control. We’ve made some progress, but there’s clearly work to be done. So of 49,000 patients diagnosed with hypertension, 34% have uncontrolled blood pressure. And this control rate, this 66% marks a 3% improving average since June of 2014. So not anything to write home about, but its progress. Common challenges in addressing blood pressure control include patients not returning regularly for follow up care.

**Moderator:** Sure.

**Cafarchio:** Patients not adhering to self-management, which may include things like diet, exercise, self B.P. monitoring. And you know a real challenge remains still with patient’s ability to accurately track, excuse me, provider’s ability to track patient medication adherence. So that’s a real gap I think in the process. And so efforts will continue to test small strategies you know to overcome those barriers and others.

**Moderator:** Great. Now Hilary, to turn back to you for a moment, through your own work you’ve been able to work with several systems on this issue. Can you describe some of the examples of how other health systems have looked for potentially undiagnosed hypertensives in their own practices?

**Wall:** Sure, so we’ll start with North Shore University health system, which is in the Chicago area. They explored potentially undiagnosed hypertensives throughout their primary care network and they were lucky they had informatics staff who would help them do this sort of data exploration. They were able to embed algorithms directly into their electronic health record system to then find those patients at risk for undiagnosed hypertension. They then implemented a diagnostic protocol using the automated office blood pressure machines I mentioned earlier. Really just to verify whether or not those patients had hypertension. What I really like about this work is sometimes I hear this notion of undiagnosed hypertensives a documentation issue. That hypertension is written somewhere in the physician notes or elsewhere in the electronic health record and there is no diagnosis code. In North Shore took a random sample of the patients they found through those embedded algorithms, and only 4% of the patients they sampled actually had hypertension documented in the electronic
So I think that this is something that other health systems should consider exploring as well. And North Sure used a mix of both liberal and conservative criteria for finding patients at risk for undiagnosed hypertension. Of the almost 1,600 patients that they found in their cohort, over 500 of them were identified using their most conservative criterion. And 400 of the 500 patients were not caught by either of the other two criteria they used. So I say this as a way to support that starting small principle.

Moderator: Yeah. Now, what are some other critical aspects of this work? Can you tell us about another case of specific lesson that’s been learned?

Wall: Sure. Palo Alto Medical Foundation in California did similar work. They assessed patients with two or more abnormal blood pressure values and antihypertensive prescription or both. They found that 40% of those patients did not have a diagnosis of hypertension. When they included that sort of 40% group in calculations for hypertension prevalence, they saw a 10 percentage point increase in their hypertension prevalence. And a really important aspect of this research is that the authors found a patient is much more likely to be on an anti-hypertensive prescription, on an anti-hypertensive medication, excuse me, if they have an appropriate diagnosis code. So for these researchers, a diagnosis code equaled treatment.

Moderator: Sure. Now can you briefly tell us if there is anything else that researchers have learned about undiagnosed hypertension?

Wall: Yes. The University of Wisconsin, we didn’t include this case study in our JAMA perspective, they looked at this phenomenon among younger adults and found that as they followed potentially undiagnosed patients over several years, that young cohort was much less likely to be given a diagnosis code. And this is an area that I think is a great public health aspect, is exploring potential disparities among this potentially undiagnosed hypertensive population.

Moderator: And can you tell us about how this had worked in other places within the U.S. health system?

Wall: So the published literature is great. We can get a lot of good information from it. But CDC really wanted to know in depth what it would take for federally qualified health centers of FQHCs that Sandy has been working with, what would it take for them to do this kind of work and what barriers would they experience along the way? So we partnered with the National Association of Community Health Centers who recruited 10 FQHCs from four different states and they explored finding undiagnosed hypertensive in about 100,000 patients. And of those who were able to be brought back in for confirmation 1 out of 5 or 20% were found to have hypertension. I am not surprised that it was only 20% because they did use a liberal criteria, but there is a lot to be learned from the project. And the National Association of Community Health Centers developed a mini change package that has some of the tools that the health centers used as they undertook this information. And that is available on their website.
**Moderator:** Great. Now before we take questions from our viewers, I want to make sure that we hear from both of you about some other issues that folks need to be aware of when they are trying to find people with undiagnosed hypertension. So Hilary, let’s start with you.

**Wall:** Sure. So as Public Health and Clinical Medicine come together to do this kind of work, there are a few things that we need to keep in mind, we can undertake finding undiagnosed hypertensives for both clinical quality improvement purposes and public health surveillance. And those are two different things. So for clinical quality improvement, it’s important for public health to recognize the need to allow for flexibility in the clinical criteria that clinicians use to find potentially undiagnosed hypertensives. I know that some Departments of Health are running learning collaboratives where they have a number of clinicians or health centers together doing this kind of work. And in a case like that, it may be easiest to create one set of clinical criteria like the work that Sandy outlined. But I would recommend allowing for flexibility in how clinicians bring those patients back in for confirmation. Allow them to use really conservative criterion. And then from the Public Health standpoint, it’s important to pick one definition for undiagnosed hypertension to see how pervasive the problem might be in your community. But you could look at surveillance using different definitions and see how the data vary using those definitions. And then for both clinical quality improvement and public health surveillance, I want to bring us back to that disparities issue. I think we need to explore both sides of the coin to see is this a systematic issue that is happening to all different types of patients or are some particular populations experiencing it disproportionately? And so those differences could be with regard to age, sex, race, ethnicity, insurance status or insurance type, geographic location, you know, the list goes on and on.

**Moderator:** Now you have mentioned earlier of the phenomenon of hiding in plain sight. Do you think that could be applicable other conditions?

**Wall:** Absolutely. And so when we look at NHANES data that same data source I mentioned before, when we look at adults ages 21 plus who are eligible for cholesterol lowering medications according to the most recent guidelines that came out, we see that 64.5% report either taking a cholesterol lowering medication, making lifestyle modification, or doing both. That leave 28 million people who could benefit from additional clinical support.

**Moderator:** Absolutely. Now Sandy, would you agree, are there parallels that you would draw?

**Cafarchio:** Yes absolutely, I agree. And it’s something we’re just beginning to explore with both diabetes and pre-diabetes. It takes a different shape than undiagnosed hypertension in that every patient gets a blood pressure. And so you have a wide field and opportunity for those diagnosed. What we’re finding with undiagnosed diabetes, which is a measure we just released in the health systems collaborative, is that the outcome rate is really, really low. That
is the great news. But in reality, we’re not broadly using a screening that’s our basis, that is the clinical trigger for the clinicians, and because we’re not broadly screening outside of the diabetic population, there is probably a lot of undiagnosed out there that we simply don’t have a test on. And so we’ve backed up to this step or I guess it’s a parallel process I would say, where we’re looking at who is at risk. Who should be tested. And so looking at algorithms to identify who are those patients who would benefit from it being screened. And then of course once we have broad screening information, then will come, you know, the opportunity to look for undiagnosed within the screening results.

**Moderator:** Thank you. Now, also, just before we go to questions, can you quickly talk about some of the resources that folks can access as they start working on this important issue?

**Wall:** Sure. Hopefully towards the end of February there will be a new Million Hearts landing page that hosts several resources. I mentioned the hypertension prevalence estimator tool that can help health care settings figure out their expected hypertension prevalence, so that will be up there. We also have a whiteboard animation coming, this is just an artist’s rendering of the topic we’ve been talking about today. I think it will be really nice to help get clinical teams on board supporting this issue. And it really just makes the topic more digestible. And next week on February 23, CDC and the National Association of Chronic Disease directors are holding a fireside chat on this topic from 3:00 to 4:00 P.M. eastern time. And this is meant to be a relaxed discussion that I will happen to be moderating between New York State’s own Ian Burset and Jim Shultz who is a physician at an FQHC out in San Diego. So it should be a lot of fun.

**Moderator:** Excellent. Thank you so much. Now our first question that has come in is for Sandy. Why did the HCNNY Million Heart collaborative sites have such a low rate of undiagnosed hypertension compared to the national rates? Is it because they were already identified through previous efforts?

**Cafarchio:** I believe that to be true. We certainly, you know, didn’t have the opportunity to do a lot of research and figure out why, but I do want to say and maybe Hilary can add to that. Federally qualified health centers in general have some pretty good processes in place. And so I think we were probably a little ahead of the curve. I don’t know if there is, I am sure there is not yet a national FQHC undiagnosed rate. So it would be interesting to see how our rates because those national estimates are based on sort of just a few projects that are happening. So as it becomes more widespread, it will be nice to compare and see if, in fact, our rates are still low compared.

**Wall:** And just quickly, in West Virginia, researchers looked at 11 different HQFCs and they found that this problem varied from 3% to 45%, so I think we’ve got some high performing FQHCs here, but you know, we should expect a lot of variability.
Moderator: Absolutely. Another question, what is a practice identifies issues with accuracy and blood pressure reading? How can this be addressed and corrected?

Wall: So I think Kaiser, they have done a lot of quality improvement work on hypertension control. And before they could start any of that work, the physicians needed to believe the accuracy of blood pressure measurements. So they went and did a whole training program for all of their clinicians. So that they knew with confidence there was a great accuracy in the blood pressure values. And I do think that is very important. But I think you can be, there are lots of training programs and I think you guys may have accessed one of those, so that they are out there and we can point people to those resources.

Cafarchio: Yeah, I would just add that it is the whole continuum, so I am not the most versed to speak on this, I'll tell you what I hear from the providers all the time. And that is about the equipment, is it a calibrated correctly, does it fit properly, and then of course the process that the staff member uses to complete the blood pressure. It’s a process that really needs to be adhered to and pretty constantly I understand, so with the staff turnover and that training becomes an ongoing battle.

Moderator: Thank you. We have another question that says, we are a small practice just beginning to use an electronic health record. Do EHRs have to have minimum specs to be able to do this type of work? For example, the registries are embedding automated algorithms?

Cafarchio: So you know, I’ll start and we will talk a little bit about the EHR requirements. There is a certification standard for EHRs today. And those standards do include the ability to produce a registry and many other things. And certainly clinical decisions support tools. But those are both really big words, registry and clinical decision support. So there are requirements for EHR vendors. Sadly, there is no real requirement they do it well and there is not test right, to decide what’s best.

Moderator: We also have a question. Dr. McIntyre mentioned collaborating with her local health department. Do either of you have input on how local health department can be helpful doing this work?

Cafarchio: Sure, I'll start, from that experience, I can tell you from insider knowledge that Dr. McIntyre relied a lot on their local health department for patient education purposed and today they're working and so are other local health departments working with our collaborative health centers to connect the health centers with available community resources. So whether its diabetes prevention programs, self-management programs, things of that sort. So local health departments have stepped up in that way. And that’s how we have identified ways to use them. I think there is a lot of stones unturned and innovative ways that the health departments can work with the practice.
Wall: So I would just quickly add, I agree with what Sandy said, the community resource piece is so critical. But I think local health departments, again there is a lot of variability in their capacity and the types of staff they have. They can raise awareness even if they’re just doing that, that’s a huge service. They can point clinicians and health systems to resources that might be available. If they have epidemiologist on staff, they may be able to provide some sort of data assistance and what measures to explore. They might have quality improvement staff, they may be able to provide some sort of data assistance and what measures to explore. They might have quality improvement staff on board who can help walk health systems through some of this work.

Moderator: Well I think that is all the time we have for today. So thank you, both, for all the information you shared. You did a tremendous, got a tremendous amount of information in in the hours.

Cafarchio: Thank you.

Wall: Thank you.

Cafarchio: We enjoyed it.

Moderator: Thank you very much for joining us today. Please remember to fill out your evaluations online. Your feedback is always helpful to the development of the programs and continuing education credits are available. To obtain nurse continuing education, CME, and CHES credits, learning must visit www.PHLIVE.org and complete an evaluation and the post test for today’s offering. Additional information on upcoming webcasts and relevant public health topic can also be found on our Facebook page. Don’t forget to like us on Facebook to stay up to date. This webcast will be on demand on our website within two weeks of today’s show. Please join us for the next webcast on March 17, 2016, focused on increasing on Colorectal Cancer Screening Rates in New York State. I’m Rachel Breidster. Thanks for joining us on Public Health Live.