Emelia J. Benjamin:

My name's Emelia Benjamin, and it's really an honor to speak to you today. In the 1970s, my grandfather had a heart attack. We went to the hospital and he was fine, but the night prior to discharge, after a couple of weeks in the hospital, he had a massive cerebrovascular accident that left him devastated in a vegetative state for the next two years of his life. If we fast forwarded by 50 years, he would have had his risk factors treated. If he had had chest pain, he would have gone to the hospital, he would have had a PCI, probably gone home in a day or two without a stroke. Even our language has changed. We no longer talk about cerebrovascular accidents or heart attacks like they're some kind of mysterious exogenous force. In fact, we can prevent heart disease, and we've made major strides. Cardiovascular disease is really the quintessential triumph of medicine of the last 50 decades because cardiovascular disease mortality has been cut in half.

Emelia J. Benjamin:

So why did the American Heart Association issue an urgent call to action, more importantly a way forward? There's a huge concern with cardiovascular disease mortality rates stagnating, and not only stagnating and leveling off, but in certain demographics, such as those who are from rural areas, middle-aged Americans that are white, it's actually been going up over the last decade. And there are important and disturbing disparities among ischemic heart disease mortality by race and ethnicity. So for instance, compared to their white counterparts, individuals who are from Native American ancestry have not had the same leveling off or the same improvement in cardiovascular disease mortality. Compared to their white counterparts, blacks still have higher rates of ischemic heart disease mortality. Obesity rates in children vary by race and ethnicity and sex. When we look at obesity rates compared to their white and Asian counterparts, blacks and Hispanics have higher rates. So these disparities are emerging in childhood and having longterm health consequences throughout the life course.

Emelia J. Benjamin:

Now, why do these disparities exist? Well, part of it is because of access to care issues, et cetera, but an underlying issue is the social determinants of health. The social determinants of health, such as economic status, education, et cetera, really are more and more determining people's healthcare experience, geography, et cetera. So another major concern that the presidential advisory articulated is although we're seeing a flattening of the mortality rates' improvements, we are not seeing a flattening in healthcare spending. And in fact, cardiovascular disease spending has gone up 147% over the last two decades.

Emelia J. Benjamin:

So, what are patients worried about? People are deeply concerned and disturbed about the cost of healthcare. How am I going to be able to afford food and my health insurance? How am I going to be able to pay for my medications? How do we do this? And we can't even say that we're delivering more value. In the '90s we did. We saw a decline in mortality, but that where they leveled off, raising real questions about the value in healthcare.

Emelia J. Benjamin:

Another major area of concern is the development pipeline for new pharmaceutical agents. There are seven times more oncology agents in development than cardiovascular drugs. In fact, in 2017 only one medication was approved and of the over 7,000 medications, 8% were cardiovascular. Cardiovascular disease is the leading cause of death, disability worldwide, 8%. So there are large, huge missed

opportunities at every step in the treatment and prevention of cardiovascular disease. First and foremost, I would say as an epidemiologist and somebody who cares about prevention, we could reduce cardiovascular disease mortality if people took known efficacious treatments to control their risk factors. There's a failure to elicit and follow people's goals of care, and this is despite the fact that we know when people are engaged in their treatment, they're much more likely to take their medications, they have better outcomes and they are more satisfied.

Emelia J. Benjamin:

There's a failure to diagnose. Something like 20% to 40% of heart attacks occur in individuals who don't even know that they have cardiovascular disease. 20% to 30% of individuals with hypertension and hyperlipidemia are undiagnosed. Again, a failure to diagnose. About half of patients are not adherent to their statins after one year, and about half of atrial fibrillation patients do not take anticoagulation or are not therapeutic on their medication. There's also a failure to use advanced treatments. For instance, about only one in three individuals who are prescribed a PCSK9 inhibitor actually get it approved and filled, and even more disturbing is there are profound variations in the utilization of advanced treatments by race, ethnicity, gender, age, and geography. All of these are deeply troubling.

Emelia J. Benjamin:

And finally, for those who are at the end stage of their life, there's a failure to give supportive care. An example is only 5% of people who have heart failure receive palliative care. Now there's an adage, never let a crisis go to waste. We have major opportunities. And what the American Heart Association launched is a value in health initiative. So the methodology, working with Duke, is first to figure out what are the pain points? What are the gaps and how can we do better? Then they've engaged with people. They've looked at where are the innovations existing, and dialogued with innovators to think about what else can we be doing in the way of innovation in this space. And most importantly they've been engaging with stakeholders all across the spectrum. Patients have to have a voice, as well as providers, regulators and health organizations.

Emelia J. Benjamin:

So, there are four focus areas. One is value based models, new payment models for the longitudinal management of heart failure. Partnering with regulators is another focus area. Engaging patients to figure out what do you care about, what is important to you, what are important to health outcomes. Engaging with technology and trying to facilitate a learning clinical trial system so that we can get medications through the pipeline in a more efficient, pragmatic and timely fashion. We've talked a lot about the serious omissions of preventive therapy. One of the toolkits that's being developed is the early detection of stroke risk factors to inform preventive efforts. And finally, there's barely a clinician in the entire country who has not been tortured by the prior authorization experience really harming not only the quality of experience for patients but also their providers. We need to reimagine the process as a part of a value based health system. These are going to be rolled out over the next year or two with partnering with organizations.

Emelia J. Benjamin:

Also, there will be a publication in 2020 that we'll be focusing on this coming out in the cardiovascular quality and outcomes. Finally, the American Heart Association is issuing a presidential advisory, hearkening to the fact that there are major healthcare disparities in rural America and trying to figure

out how can we start to develop solutions so that we do not have health inequities for those who live in rural America.

Emelia J. Benjamin:

The American Heart Association is really founded and grounded in the whole to be a relentless force for world of longer, healthier lives. The value in healthcare initiative is part of that long legacy. One of the things that the American Heart Association always asks us to do is it asks us to answer why, and so my why on a personal sense is so that my grandfather, were he alive today, could see his grandchildren married and his great-grandchildren born. And my professional why is I work at an urban safety net hospital at Boston Medical Center. My patients and their grandparents deserve to have value in healthcare in an equitable fashion. Thank you so much.

Christopher B. Granger

Emelia, that was a terrific overview of the AHA 2019 presidential advisory. And what you told us was that in spite of all the advances, that cardiovascular disease now is stagnant in terms of any further improvement over the past several years, the cost continues to go up and that there are these major gaps in what the evidence says would improve care and what's actually happening. And then there are a number of opportunities, including at the level of the patient, the provider, the system, the payer in terms of health policy that the American Heart Association, along with the Margolis Center at Duke is dedicated to addressing. And Norma, could you start off our discussion around these issues?

Norma M. Keller:

So, I'm in New York City and I'm from New York City Health and Hospital Corporation, and we just did a community health needs assessment. And I'm not sure that even with the advancements and everything that we've had so far that they'll come to fruition without really addressing some of the other issues that you mentioned, like the social determinants and health inequities. In our population, what we found out was that we're really oversized with chronic diseases like cardiovascular disease, as well as behavioral health issues. And more than that, affordable housing, even affordable food is a barrier to cardiovascular health for outpatients. And then we'd go back to even just lifestyle changes like diet and exercise.

Norma M. Keller

It's very difficult for some of our patients because they can't afford food and then they actually don't even have safe spaces where they can exercise. So a lot of the time you have to take that extra step and really ask well is there somewhere safe you can exercise? Where are you getting your food? Because a lot of the food is the most expensive food. And in terms of our population, we have a lot of non-white individuals and patients and families. We have the largest population of Southeast Asians, African American, Hispanics, which are high risk and have all of these negative social determinants as well. So it makes it a big challenge to take care of them. We're trying to address some of them.

Norma M. Keller

New York City Health and Hospitals has allocated some space for actually affordable housing for our patients. So I think for us, we have to take care of and address and identify in each patient what those determinants are and how we can help fix them. And then also make sure they have access to the great technology and great pharmacological therapies that we have as well. So I think there's huge gaps in terms of where we need to go from here in terms of technology and pharmacological measures, but we

still have a lot of gap and opportunity even at the patient level and the basic preventative measures that we can institute.

Christopher B. Granger:

Then you highlight some of the important issues that Gray talks about as well, about the need to customize what one is doing depending on one's environment. And Eldrin now you're in Boston now, but you're about to go to be chief of cardiology at Stanford, so you're going to have the whole country covered. What's your perspective on these issues?

Eldrin Foster Lewis:

Oh, I think this was an amazing presidential advisory on behalf of the American Heart Association. It really talks about the missed opportunities. And I think when we look at the missed opportunities, a lot of it really comes down to hypertension or control of high blood pressure. It gets at some of the misdiagnoses that we have and if you look at the inequities that we see in some racial groups and ethnic groups, as well as some of the differences, the sex based differences, a lot of it still comes down to control of hypertension, recognition of hypertension and trying to prevent the cardiovascular consequences of uncontrolled hypertension.

Eldrin Foster Lewis:

So as we look for new methods, I think we have to really think critically about novel approaches. And I like the approach of meeting the patients where they are. Whether you're in Boston or on the West coast or anywhere in between, trying to understand what are the barriers, how can we make the diagnosis, but also even once we make the diagnosis, make sure that the patient understands the significance of that. Because a lot of times, you can have a systolic blood pressure of 138 or 142 and you say, "Well that's not that bad," but that not that bad can still lead to stroke, can lead to heart disease, heart failure, and just by controlling that blood pressure, it can make a big difference. There are so many other strategies that one can use, but I think it really comes down to communication so that patients understand that a risk today could have consequences 20, 30 years away from now and by doing this we can dramatically reduce the risk of cardiovascular disease.

Christopher B. Granger:

Well let's stick with hypertension, which is both such an important risk factor and a nice example of a modifiable risk factor. And I think it's safe to say that we're not doing as good of a job as we could do at both detection and treatment. And part of the reason is because our health system, the way it's fragmented and depends on patients coming into clinics, is not so good, especially when we're talking about communities with low socioeconomic status. And Gray, how can we address this?

Gray Ellrodt:

I don't think it's all that simple, but as it's very, very important. A couple of pieces, taking one step back, I think it's a challenge for any community to try to prioritize what are those areas you're going to focus upon, what's best for the community. And there's a certain tension for those of us in accountable care organizations, et cetera, where for example, for the Berkshires, with our accountable care responsibilities, we're supposed to be tracking 72 measures. And we sit there and go, what do we prioritize? What's really important to the community as opposed to what are the payers saying you need to follow, you need to modify? It's ironic that you said that because we decided as an organization that we're going to focus on hypertension for our community.

Gray Ellrodt:

We have a very large diabetic population, like many communities, and that combination obviously of hypertension and diabetes is literally a deadly combination. So we have prioritized as an organization, community wide, the detection of and management of hypertension for our community over the next five years. We have a number of programs in place. We have community outreach programs. We have programs in churches and things like that to try to find these patients, to try to educate them along the lines you discussed, and above all to try to get them in a management program. We have a program called get cuffed, which is a community outreach program and we also are partnering with the American Heart Association on target BP. So we think these formal programs with community outreach, et cetera, are going to be very, very helpful to our community. And that's our priority for the next few years. So I think in bang for the buck, hypertension is huge, as you all know, whether it's an elderly population or whether it's a young population. So that's our focus for the next few years.

Christopher B. Granger:

That's great. And Deepak, we have evidence, right? I mean we know we have pretty simple algorithms and care pathways and I love the Ron Victor barbershop study in Los Angeles showing that if you put this in an environment where the people who need treatment come on a regular basis and have a pharmacist applying a care pathway, you can get much better results than when they come see you or me in clinic.

Deepak L. Bhatt:

Well, you bring up a lot of great points. First of all, I think there is a lot that can be done with diet. There's been a lot of controversy about salt, but I would still say low salt diets are a good thing. Don't add salt. A lot of food that has salt in it, things like breads, have other bad stuff, high in carbs. So, diet matters. But beyond that when there's high blood pressure, there are a lot of good generic medications out there. So they're cheap. They've been studied for years, are reasonably safe. And if someone's having side effects to one medicine, there are multiple other ones to choose. So I think a lot of what you're getting at then is really implementation science where we know the answer, it's just a matter of how to effectively deliver the care to the patient.

Deepak L. Bhatt

And I think there's a lot we can do at a community level, as you're alluding to with the barbershop study, and it sounds like your healthcare system's doing a great job with that. So, there's room for improvement, but there's reason for optimism as well. And I think these system based approaches that really get clinicians on the front lines, get them really energized can make a huge difference.

Christopher B. Granger:

And I do think that the value-based health systems and care and policy to enhance that, that we have a different payment system for achieving community care is something that's really important. Well, Emelia, what's your sense now about this discussion, about where we go from here?

Emelia J. Benjamin:

What can we do at all stages of the life course with primordial prevention starting in youth to primary prevention, starting when people are young adults or adults? And so let's just think about what does that look like for hypertension. If we think about hypertension, how do we get our kids more active so that they are not obese? How do we get children out of food deserts or at least access to good quality,

high quality care on food? And then as we go through the life, how do we get people on treatment, how do we get them to goal, et cetera? And the cornerstone of this is really going to be more effective healthcare systems.

Emelia J. Benjamin:

I think one of the huge issues is that in the past, physicians have been incentivized for doing things to patients or ordering tests, et cetera. And actually a lot of the movement in hypertension turns out that something like half of Americans that have high blood pressure have home blood pressure devices. And so how do we get that more connected up? And I was interested in hearing your perspective on that. How do we get the home blood pressure devices into more homes so that people can have more of a sense of ownership and access to understanding their own data?

Eldrin Foster Lewis,:

I think several possibilities exist there. I think the first is to make it accessible. Although blood pressure cuffs have decreased in price recently, it's still unaffordable for many people who are living in the United States, especially in rural areas, people who are on limited income. So if there was a way to make that almost free for patients with high blood pressure as a part of healthcare delivery and it's part of a system, that'll be one approach. I think the second is understanding when the number is concerning. And so if it could link to a smartphone and that smartphone can give you guidance to say you need to call your doctor, you need to talk to your primary care doctor, this is a concerning value, please recheck it to confirm. I think all of those are important.

Eldrin Foster Lewis:

If we are looking at current technology, technology will tell us when someone's given us a text, if our app is trying to reach out to us. So why not take advantage of some of this technology so that it can actually help patients understand when they should be alerted to a blood pressure issue? Because you'll be amazed that people who are reasonably health literate, who don't know that a systolic blood pressure at a certain level or even a diastolic blood pressure, which is above a certain level, can be dangerous.

Christopher B. Granger

So, thanks. This has been a terrific discussion around perhaps the most important thing that we can do in healthcare, which is to reduce the burden of cardiovascular death and disability, the number one contributor to those that exists. So, thanks very much.