PRESSURE'S MOUNTING

THE **URGENT NEED** FOR INNOVATION IN HYPERTENSION CARE

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PARTNERSHIP TO **ADVANCE**
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INTRODUCTION

Over the next decade, about 25 million U.S. adults will develop hypertension — even though the potentially deadly disease is both easily diagnosed and treatable.[1]

Why? The answer is multifaceted.

First, hypertension often affects patients who are least equipped to handle it. About half of American adults currently have high blood pressure, many of them people of color, people of low socioeconomic background, or people facing common comorbidities such as diabetes and obesity.[2]

Second, while medications and treatments to manage hypertension abound, adherence remains an obstacle. The range of medications to treat high blood pressure is greater than ever before, yet the number of adults facing hypertension is up 31% since just two decades ago.[3] In short, the health care system can offer many medication options but not the tailored approach and tools that some patients need.

Research continues to yield innovative medical approaches to hypertension. To overcome non-adherence and close persistent gaps in health outcomes, however, policymakers must work alongside health care providers, manufacturers and patients. Together they can craft solutions that ensure access, encourage patient-centered care and foster a heart-healthier America.

PART 1

THE BURDEN OF HYPERTENSION

A Look at Hypertension

Hypertension is defined as systolic blood pressure higher than 130 mm Hg and diastolic pressure higher than 80 mm Hg.[4] Almost half of all adults in the United States today are above those levels.[5]

The risk of developing hypertension rises with age.[6] While it runs in some families, lifestyle choices related to diet, tobacco, alcohol and exercise also play a role.[7] High blood pressure increases patients' risk of heart disease, heart attack, and stroke.[8] And over time, it can damage other major organs like the kidneys and eyes.[9]

The High Cost of High Blood Pressure

Hypertension levies a significant burden on both society and individual patients. Barbara Hutchinson, MD, PhD, a practicing cardiologist in Maryland, has treated thousands of patients in her 20-year career. She estimates the seriousness of the United States' hypertension challenge, saying, "Hypertension is a major public health issue, if not the most important."

Cardiologist Martha Gulati, MD, explained the irony of hypertension's impact. "Of all the risk factors, hypertension is widely known in the prevention community as the most preventable," Dr. Gulati notes, "but also the most under-treated, despite relatively new guidelines and lots of medical therapies."

"Hypertension is the leading risk factor for cardiovascular disease."

Martha Gulati, MD

About one-third of all heart-related emergency room visits and more than 500,000 deaths in the United States are triggered by hypertension every year.[10,11] It is often called a "silent killer" because, while some patients experience headache and fatigue, many patients' first "symptom" may be a fatal heart attack or stroke.[12]

Dr. Hutchinson says, "You might not notice when it's mild or moderately elevated. But it just takes that one day when it gets too high to have a lasting effect on a patient's life."

Hypertension poses further cardiovascular risk because it routinely overlaps with other chronic diseases. Dr. Raymond Townsend, MD, says, "These conditions are co-conspirators [with hypertension] to advance organ damage throughout a patient's body."

Hypertension's price is exorbitant. A 2018 study found that hypertension costs the United States $131 billion per year in direct health expenses alone.[13] Indirect costs — including lost productivity, absenteeism, presenteeism and even disability — add tens of billions more to that total.[14] At the individual patient level, Americans with hypertension "face $1,920 higher health care costs each year compared to those without high blood pressure."[15] Especially given its comorbidities, hypertension can heighten patients' stress and anxiety. In some cases, concerns about hypertension management can intensify the stress. As Nancy Miller, RN, explains, "Patients have a lot of questions. 'Am I on the right medicine?' 'Why do I need to take more than one medicine?'"

"Most patients," she says, "want to take as few medicines as possible."

Some patients may also find it harder to exercise or participate in heart healthy activities. This, in turn, can take a toll on a patient's condition by perpetuating feelings of loneliness or isolation.

"People with hypertension often have other cardiovascular comorbidities, like diabetes and obesity."

Raymond Townsend, MD

PART 2

DISPARITIES IN HYPERTENSION

Not all Americans feel hypertension's burden equally, however. Communities of color are disproportionately affected.

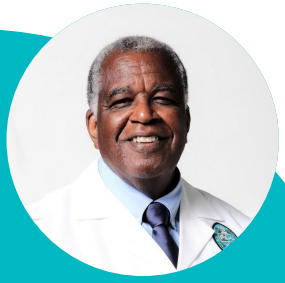
Black Americans

More than half of Black Americans have high blood pressure, a rate 30% higher than white Americans, and the highest of any racial group.[16,17] It's little wonder, therefore, that Black Americans are 50% more likely than their white counterparts to have a stroke and are also more likely to die of heart disease.[18,19]

Though Black Americans are at a greater risk for hypertension, and tend to develop it earlier in life, they are less likely to have their blood pressure under control, even with medical care.[20,21]

Cardiologist Keith C. Ferdinand, MD, has spent decades providing care to underserved populations. He says, "Communities of color have historically hard-to-control blood pressure — even with prior availability of numerous medications." Some anti-hypertensive medications — particularly ACE inhibitors and beta blockers — do not work as well for Black patients, further limiting their ability to get their hypertension under control. "Hypertension," Dr. Ferdinand says, "is one of the most powerful factors behind the white-Black mortality gap."

"Black Americans in particular are heavily affected by hypertension."



Keith C. Ferdinand, MD

Hispanic & Asian Americans

Hispanic Americans are also at a greater lifetime risk of hypertension than white Americans.[22] Forty-four percent of Hispanics today have high blood pressure.[23] And their condition is less likely to be diagnosed, treated or controlled.[24]

Elena Rios, president of the National Hispanic Medical Association, acknowledges the diagnosis challenges faced by Hispanics. She says, "It's important that Hispanics know that hypertension is increasing in their population — and so are serious cardiovascular issues like stroke. To avoid these kinds of issues, or at least reduce their severity, Hispanic patients need proper screening, treatment and some modifications to their diet."

Asian Americans are less likely than white Americans to suffer from high blood pressure but, like Hispanics, less likely to get their blood pressure under control after diagnosis.[25] Asian Americans also suffer more severe strokes.[26]

Social Determinants

Racial disparities among hypertension patients mirror those found across the U.S. health care system. They also reflect the role of social determinants of health.

For example, Black and Hispanic Americans are less likely than their white counterparts to have health insurance.[27] They are also less likely to have a regular health care provider and therefore more likely to go to the emergency room for care.[28,29]

Black and Hispanic Americans tend to have lower incomes than white Americans.[30] They are at greater risk for depression.[31] And they are more than twice as likely to experience food insecurity, which contributes to their higher risk of obesity and Type 2 diabetes.[32]

These factors have a clear and direct impact on the prevalence and impact of hypertension in communities of color.

Social and environmental factors can drive racial disparities in hypertension.

PART 3

NON-ADHERENCE AND THE NEED FOR INNOVATION

Pharmacological treatments for hypertension were first introduced in the early- and mid-20th Century.[33] Since then, medical research has continued to yield a growing variety of effective medications.

As Nancy Miller, RN, with the Preventive Cardiovascular Nurses Association, says, "There are plenty of options today. There are a huge number of medications — including generics — to treat hypertension."

Current medication classes include:

- Diuretics
- Beta-blockers
- Angiotensin II receptor blockers
- Angiotensin-converting enzyme, or ACE, inhibitors.[34]

Yet, even with a variety of treatment options, rates of uncontrolled hypertension among adults continue to rise. More than half of adults living with hypertension today don't have it under control.[35]

A primary factor is medication non-adherence. According to one study, about one-third of Americans being treated for hypertension do not keep up with their medications.[36] While patients stick with some medications better than others, "adherence [is] suboptimal regardless of drug class."[37]

"Many patients have to be on at least two medications to hit target blood pressure. That can be a difficult situation as it relates to adherence."

Nancy Miller, RN

Hypertension patients fall behind on their medication for any number of reasons: side effects, out-of-pocket costs, plain forgetfulness. But the effects are predictably dire. More than 100,000 Americans die every year — unnecessarily — simply because they could not keep up with their treatments.[38]

Raymond Townsend, MD, reflects on non-adherence. Speaking from years of clinical experience he says, "One of the most important factors… is how many medications they're taking, as well as how those medications make them feel. Another is that high blood pressure is asymptomatic, leaving patients wondering what they're even treating."

Nancy Miller, RN, relates. She says, "I often hear [from patients], 'Why do I have to take all these medications? I don't feel bad, so I don't even see the need for it in the first place.'"

In some cases, a patient might do everything right — exercise, eat a heart healthy diet, keep fast to their medication regimen — but they still can't get their hypertension under control. They have what is commonly referred to as resistant hypertension. Dr. Gulati says, "Resistant hypertension can be determined after a patient fails to get their blood pressure to an acceptable level with three full-dose medications."

If action isn't taken at the societal level by 2035, more than 25 million more Americans will have to contend with hypertension.[39] Finding outside-the-box solutions is a public health necessity to curb hypertension's growth and associated costs.

The Need for Innovation

One solution to the epidemic of high blood pressure — its prevalence, impact, costs, racial disparities and non-adherence — is innovation. Many potential breakthrough technologies are in the research-and-development pipeline, and some are already on the market.

Remote monitors, for instance, allow patients to track their blood pressure in real time. Being more aware of their blood pressure makes many patients more likely to work toward managing it. For patients in rural areas, devices like home cuffs, implantable sensors and wearable devices can help link them to health care providers regardless of geographic barriers.

Barbara Hutchinson, MD, PhD, supports remote monitoring devices, saying, "I think they can improve accuracy of readings and bolster care." However, she warns that remote devices need to selected with care. "For example," she says, "if they get a cuff that isn't properly sized to their arm, their readings could be inaccurate."

Meanwhile, the ubiquity of mobile devices allows patients and health care providers to sync electronic reminders for their medication regimen. Customizable mobile apps and emerging tech, like smart pill bottles, have even greater potential to keep patients on track.

"Physicians and patients have a variety of medications at their disposal, yet America's hypertension problem continues to grow."

Dharmesh Patel, MD

In cases where traditional treatments prove insufficient, cutting-edge blood-pressure management devices could prove invaluable additions to hypertension treatment plans. Dr. Townsend says, "We still have a problem with 40% of patients in the United States not at goal blood pressure. And medications will never work in patients who don't take them. Innovative devices are just more tools at our disposal to tackle our country's hypertension epidemic."

All patients — regardless of race, region and income — deserve access to these and other technologies, both to personalize their treatment and help them stick to it.

Stakeholders in the hypertension community — from patients to providers to agencies to policymakers — can champion these technologies to help close the gaps in information and outcomes that pervade the U.S. health care system.

One step Congress can make in the near term is to ensure Medicare coverage of "breakthrough" medical devices. The Food and Drug Administration has a priority approval process for new medical products that dramatically improve on current treatment options, especially for serious conditions like hypertension. But, under current law, even if these devices work and win FDA approval, Medicare may not cover them.

The Ensuring Patient Access to Critical Breakthrough Products Act of 2023, a bipartisan bill recently introduced in the U.S. House of Representatives, would fix this.[40] It would guarantee all "breakthrough" devices four years of Medicare coverage, starting immediately upon FDA approval, during which time the program's decision-makers would determine its permanent coverage status.[41]

Approaches like this, at every level of government and every sector of the health care system, are how Americans can fight back against hypertension — and countless other conditions — now and in the long term.

"It's important, though, that patients be educated properly on how to perform monitoring."

Barbara Hutchinson, MD, PhD

CONCLUSION

More than 100 million Americans already have high blood pressure, and many of them are either unaware of their condition or not taking their medications as prescribed. Minority groups and patients with comorbid chronic diseases disproportionately bear hypertension's physical, emotional and financial burden.

These metrics grow worse every year. But innovative treatment methods, facilitated by policy reform, can slow these trends. They can rescue America from hundreds of billions of dollars in avoidable health care costs and hundreds of thousands of preventable deaths.

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