CURALINK

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thecurafoundation.org

Welcome to CuraLink—a newsletter for innovators building a healthier future for all.

Dear Cura Community,

Welcome back to CuraLink, a newsletter and interview series featuring the most pressing issues in human health, unmet medical needs and the emerging innovations and technologies directed to address them.

During the remarkable Lake Nona Impact Forum, I had the privilege of speaking with the brilliant Dr. Francis Collins. Last month, we featured this conversation in CuraLink where Dr. Collins shared highlights from his monumental career, emerging technologies that are transforming health care and the "current obsession" that is driving him into the future. This discussion is an especially candid glimpse at a visionary who continues to push the field in positive new directions. You can access this interview at bit.ly/CuraLink-14.

Robin L. Smith, MD
Founder, President and Chairman, Cura Foundation

In issue 15 of CuraLink, we hear from one of the most experienced and strategic clinical executives in health care: Dr. Cheryl Pegus. From Morgan Health to Walmart to Pfizer to Walgreens, Dr. Pegus has been a force shaping public and private partnerships for over 25 years.

With her vast experience, Dr. Pegus offers unparalleled insight into the business of medicine—how decision-makers can go from putting great ideas on paper to implementing them and attaining real-world outcomes.

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A conversation with Dr. Cheryl Pegus

Dr. Cheryl Pegus has decades of leadership experience at some of the nation's biggest companies impacting health care. In November 2022, she joined Morgan Health Ventures as managing director informing strategic investments for population-based health initiatives and new care delivery models that would make a meaningful difference in chronic conditions, such as heart disease and diabetes, and move new science into practice.

At Walmart, Dr. Pegus designed consumer-facing programs to raise the standard of care for millions of Americans. Prior to that, she spearheaded pharmacy services, clinical services and cost stewardship, behavioral health and medical management and consumer solutions at Cambia Health Solutions. Dr. Pegus was the first chief medical officer at Walgreens and led projects at Johnson & Johnson, Pfizer and Aetna, where her work centered on wellness, women's health, health equity initiatives and predictive analytics. She is also co-founder and co-chair of A New Beat—a nonprofit dedicated to improving the cardiovascular health and careers of women and underrepresented minorities. In addition, she serves on numerous boards including at the American Heart Association, the Alice Walton School of Medicine, TruLite Health and Kindbody and is co-chair of the Atria Academy of Science & Medicine.

Cheryl Pegus, MD, Managing Director, Morgan Health Ventures; Co-Founder and Co-Chair, A New Beat; Co-Chair, Atria Academy of Science & Medicine

Across these opportunities, Dr. Pegus has masterfully executed transformative solutions to tricky problems while keeping health equity at the forefront. In issue 15 of CuraLink, Dr. Pegus forecasts the future of consumerism in medicine, shares the power of a "whole health" approach and discusses why the most critical issue in health care comes down to people.

What inspired you to pursue a career in medicine and specialize in cardiology?

When I was young, my grandfather became very sick. My family provided care for him at our home, and I loved spending time with him. He eventually passed away because of his illness, but the experience inspired me to think about a career in medicine early on.

In college, at a summer program at Cornell and later in medical school, I met many cardiologists who I found to be really fantastic people and mentors. I chose cardiology because there was a great mission to eradicate heart disease, the largest killer of women and minorities in the U.S. and the largest global cause of disease. I saw myself making a difference in that specialty.

You've spoken publicly about your frustrations with the lack of diversity in health care. How can we bridge these health disparities, and what are the important factors to consider?

First, we have to look at the data. One trend is that people access health care locally. They don't travel for care. In local communities, many services are offered by people who you build relationships with: from your dry cleaner to your hairdresser. That's how health care should be: We should know our local healthcare professionals.

Studies have shown that people who provide health care in communities of people of color tend to be people of color. Peer-reviewed studies have shown that this can improve outcomes. Some of the thinking here is that people are more likely to follow guidelines or medical advice from someone they trust—healthcare professionals who understand their diet, speak their language and understand their life circumstances.

It's not that everyone doesn't know that they should exercise every day or shouldn't smoke. It is having a trusted voice sharing advice with you. That really matters. We should ensure that we're building that trust into every healthcare ecosystem.

We have to always ask: If we understand the data, how do we implement it? We have seen that increasing the number of women in medicine increased research showing that women's bodies are different, and we are focusing on medical conditions like menopause, for example, more than we have in the past. We should take the same approach with racial and ethnic populations to get the best results for everyone's health. Investing

in the science and the people who are training in that science, innovating—all to ensure that patients feel comforted and feel that they will get the best care. To improve health equity, we have to fix all of these pieces simultaneously.

Your non-profit, A New Beat, is dedicated to improving the cardiovascular health and careers of women and underrepresented minorities. Have you seen major progress in these areas, and where can there be improvement?

Based on the data, progress has been slow. During the COVID-19 pandemic, we actually saw a retrenching of progress. For many people, health equity was a new issue. Some people did not know that people in underserved communities did not get the same level of care and did not trust the healthcare system. Hearing that was surprising. Many researchers have been talking about this one issue for the last 30 to 50 years.

What that says is that there is opportunity to increase the diversity of experiences of the people doing research, understanding data, building healthcare businesses, working on implementation and sitting at the tables where decisions are made. It opens the door to collaborate and learn that I hope we all will partake in going forward. For everyone who understands the data, we have a responsibility to ensure it is incorporated into health care in every community.

A New Beat is focused on encouraging underrepresented trainees in medicine to feel that they're uniquely capable of improving health care in diverse communities. You may present your point of view differently, you may look different, and you may communicate differently but embracing these differences can improve clinical care for many patients. We want trainees to know that they are able to provide value in health care that we absolutely need to improve health outcomes. We also focus on getting more people into medicine who are going to practice in typically underserved communities. Hopefully, A New Beat makes people feel that the reason they want to practice medicine is the benefit they provide to communities, and that's a win.

What are the most pressing issues in health care today, and how can we solve these?

The biggest issue in health care today is that clinicians, nurses and pharmacists are leaving their professions. In 2021, more than 330,000 healthcare professionals—including over 117,000 primary care physicians—left the field. Those numbers are staggering considering the already limited number of clinicians. If there's no one to provide care, we are all going to feel the effects. I'm very focused on helping clinicians feel that they are fairly compensated and living out the mission for their "why" in joining the field of medicine. We want to help people feel that they are one of "us" and that they are supported in their life pursuits. Medical education and practice, to date, have not always taken these factors into account. We have said: "You're strong and you can muscle through it." But clinicians are saying: "We need more."

Dr. Cheryl Pegus is co-founder and co-chair of A New Beat, a nonprofit dedicated to advocating for women and underrepresented minorities rising as leaders in the field of cardiology

Changing medical education is crucial. It's part of the reason that I am on the board of the new Alice Walton School of Medicine. We are trying to reform medical education so we can help people enjoy all aspects of the profession, encourage them to serve their communities and train them in whole health and the business of medicine.

Technology can and will enable these changes. With tech, we will expand the team providing care to include others like community health workers and utilize platforms to share data while engaging the patient and consumer to participate in shared decision making. There are many administrative duties that doctors perform that they shouldn't have to. Technology means that other members of our healthcare team, like pharmacists, can manage some of the care and administrative tasks to relieve some burden from physicians. Technology will also decrease medical errors, which will help clinicians feel comforted that they are providing the best care possible. All of these pieces can also impact the cost of care.

Without technology, we will not get there. We do not have enough clinicians to provide the care that we need, and we need to use technology and AI and enable education to shift to more team-based care.

If everyone got their immunizations from the pharmacist, which may be on the weekends or evenings that are convenient for them; the savings to the healthcare system could be significant—in some studies 12-20% lower than in a doctor's office. Some of our immunizations, including the Hepatitis B and HPV vaccines, impact cancer—just look up what the cost of those are to us as a country. This is a great example of changes that can be achieved with a whole health team-based model.

What is your ultimate vision for personalized and preventative medicine? How can this approach help all Americans achieve what you call "whole health"?

Almost all of us start off really healthy. What we know helps you stay healthy is "Life's Essential 8," a checklist developed by the American Heart Association that includes: diet, physical activity, sleep, no smoking, as well as managing weight, blood pressure, cholesterol and blood sugar. People crowd these factors out somehow as they age. When we think of whole health, these pieces must be paramount for both clinicians and patients—a focus on prevention.

Dr. Pegus receiving the American Heart Association Chairman's Award in 2019

The second piece of whole health is how to get people to change their unhealthy behaviors. When a doctor explains the health risks of smoking to a patient, studies show that many more people stop smoking or never start.

It's crucially important for us to help people understand health-promoting lifestyle changes. We shouldn't only be focusing on the complaint that the patient came in with, we should focus on achieving whole health and getting people to stay healthy. That is the million-dollar challenge to lowering healthcare costs. We, frankly, don't practice enough prevention and instead operate as a reactive healthcare system, waiting until someone gets ill to come to us.

How do we instead help people understand that what they're putting into their bodies can make or break what the next 15 or 20 years of their lives will look like? To some extent, we've been lucky that people can maintain a poor diet and smoke but have a stent put in by their cardiologist, based on our great scientific discoveries. I think people are recognizing that it is not how they want to live their lives. We are talking about healthy foods more and aging healthily with the importance of sleep and physical activity.

Another relevant issue is maternal health. Changing prevention and education efforts for women, particularly those in their child-bearing years, could be a separate beneficial path to take in the U.S. For example, in high school and college, we should teach the importance of healthy diets, having access to medical care and visits and preventive vaccinations for women.

"There are many health-promoting strategies that don't rest solely on the medical community. There are ways to partner with other stakeholders to invest in prevention."

Overall, we are shifting holistically toward earlier prevention and away from a reactive approach. We now talk about food as medicine in the broader discourse. Many of us are moving rapidly to finding solutions, personalization and the use of technology. Part of what's driving that is economics because as a country we cannot sustain these medical costs.

From your perspective, how do you see health care changing and value-based care working successfully?

Value-based care is here, and it is developing pretty rapidly. Many of us in health care are already there. It's now getting into the consumer conversation. Currently, about 40% of all insurance is run through value-based care. Less than 8 years ago, it was about 23%. But we only practice it in some segments of our population. You see value-based care in the 65 and over population who may have more illnesses and diseases. Managing that care more efficiently and in a more integrated manner is very helpful. We need to shift that approach to other demographic groups as well.

One way to shift to prevention is by shifting our payment models. In many fee-for-service structures, the reason prevention doesn't happen is that you don't get the same payments as something more procedural for a sicker or chronically ill person. Value-based care can improve health equity because you have to treat everyone according to guidelines and focus on prevention to receive payments.

The ability for value-based care to improve health equity, reduce costs, move us to a team-based model and allow clinicians to feel supported is extremely positive. It's data-driven, sustainable and supported by the Centers for Medicare & Medicaid Services. I'm all in on value-based care.

You are one of the most influential clinical executives in the country, having held positions at Walmart, Morgan Health, Walgreens and Pfizer to name a few. How have you seen consumer health care change throughout your career?

The easy answer would be that the consumerism movement has caused people to engage more in their health. But the data doesn't really reflect this. More consumer information has not led to better outcomes or shared decision making. Our heart disease rates have actually increased. Our disease numbers for women and minority populations remain high. Our immunization rates have not risen, and maternal mortality rates have not improved in the U.S.

Where consumerism can and should work optimally is in helping people when they are seeking care locally. Before they walk in, they should understand the clinic's or provider's quality of care and available services. People should feel that they can ask questions of their clinician or get a second opinion if they are dissatisfied with the care they have received. Information should be health-literate. That's the definition of consumerism and a place we should all want to be. The promise of consumerism is yet to be fully realized but is possible.

Dr. Cheryl Pegus at the Health Evolution Summit in April 2023. Dr. Pegus has held leading positions at some of the nation's biggest companies impacting health care and has masterfully executed transformative solutions to tricky problems while keeping health equity at the forefront

What emerging technologies, trends or breakthroughs are poised to transform consumer health care over the next decade?

I'm really excited about looking at clinical research differently. Much of clinical research today has been done at academic centers that recruit patients. At the end of these studies, we question how widely to use the results because many studies have been made up of white males. Why aren't there more women and people of different ethnicities included? We can change that if we recruit in different parts of the country, and we are intentional in including researchers who care for diverse populations.

At Walmart, we built the Walmart Health Research Institute, and we are enrolling people across rural America, where about 30% of Americans live. Changing how we enroll people in clinical studies will give us better answers to how these treatments will work for them. Leaders of pharmaceutical and diagnostic companies are increasingly committed to working toward that. Meanwhile, the government and the Food and Drug Administration are requesting the inclusion of diverse populations. That is a huge advance.

"Over the last few years, more women have gone into medicine than men. That diversification will change research, leadership and how we look at new models of care for different groups."

In women's health, for example, female providers will ask questions that may not always get asked, because someone didn't have the related experiences. That's really important.

Innovation requires humility about what we can achieve. During the COVID-19 pandemic, we learned that we can work together much faster. We can bring solutions together globally that can change millions of lives. Those partnerships required technology platforms, data sharing and inclusiveness. They required looking real problems in the eye and solving them at a much more rapid pace. That is how we're looking at new companies coming to market. We ask companies: "Have you looked at the communities that need to be served? Are you using telehealth as well as in-person methods in a hybrid manner to reach them? When thinking of the cost, are you considering not just what a consumer pays, but also the overall healthcare system? Are you including enough stakeholders at the table who are additive to the points of view that you already have? Are you open to the possibility of not having all of the answers singularly?"

In your role at Morgan Health, you focus on strategic investments that improve the equity and quality of health care. Can you describe your investment strategy and goals in this role?

First, we start by considering different communities around the country and ask: "How can they get the best care?" We believe value-based care is the optimal model because it is team-based. It's not just about considering the patient, but the clinicians, too. Bringing value-based care to the employer market is a priority.

Second, we need to consider how to improve health equity utilizing a data-driven approach. We ask: "How are we filling the gaps and ensuring that the provider team represents the community? Are we able to measure the quality of care across any disease state and allow for real-time actions? Are we supporting our healthcare teams to be successful in achieving health equity with the right tools?"

Third is focusing on prevention and how we engage people to care for themselves. So we're really focused on the chronic conditions that are predominant in the U.S. and getting people to care earlier.

Do you have any advice for policymakers or leaders in health care to foster beneficial innovation with real-world benefits?

I've always had this belief that major change would happen if, in every state, elected officials chose one community and examined where all the gaps are—looking at things like food access or hospital services and then had solutions implemented. Measure those results/learnings and use them as a guide for further implementation. You're seeing some states try to do this more. There's a major opportunity to first learn and then scale any intervention locally using the data.

We've spent a lot of time sitting around tables and putting things on paper. We need to move away from the theoretical and do analyses on the ground, along with implementation. Going forward, I'd like to see more of a focus on execution. Policymakers with implementation expertise and experience are valuable. People who have daily expertise in frontline clinical care level implementation should be invited into the room. The policy shift from theoretical or academic to clinical could change community health care. This would be great at scale.

Trained in cardiology, Dr. Pegus serves on the board of the American Heart Association and is a past chair of the Association of Black Cardiologists

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What is the role of direct-to-consumer (DTC) strategies in bridging gaps in health care?

The most important piece is whether the business is connected to the rest of the healthcare system because health care is local. Even if I as a patient reached out to you digitally—if tonight I had a problem, where would I go? If you haven't built that connection into your solution to connect to local and available resources, improving health outcomes will be challenging, especially for the highest-risk people.

Access matters and connections matter. Behavioral health is one area that has really been enabled by DTC offerings. The need here is great and we have more work to do in how we offer hybrid models, personalize to different demographics and impact individuals.

Do you feel like medicine is heading in a positive direction? What gives you hope that we will better serve patients and communities in the future?

That dyad of combining the business of medicine with health care to solve problems is closer than it's ever been. We discuss the cost of health care, our healthcare professionals and their critical needs, new payment models and technology with hybrid care.

We're focused on real health issues and real solutions, as well as multiple access points from retail to digital to in-home.

The pandemic allowed us all to look at ourselves and say: "We can develop revolutionary treatments rapidly, and we should continue doing that." We're not pointing fingers at each other, and when we learn good practices or good evidence-based guidelines, we're committed to sharing them globally and moving quickly. Based on all of this, I'm extremely hopeful.

This interview has been edited for length and clarity.

Insights, Perspectives & Ideas

Chronic Pain: The Long Road to Discovery

Nature, March 2023

Philip Kass's chronic pain has cost him his career, relationships, mobility and independence. Evidence suggests that the machinery that processes pain can help sustain it or make it worse, and that emotional distress can both feed and feed off pain. Researchers and clinicians argue that the knowledge and tools are already available to treat people with chronic pain conditions more efficiently and effectively. Changes are necessary to improve outcomes, such as a shift in attitudes toward chronic pain, persuading insurance companies to cover integrative care and improvements in medical education and training.

The Hidden Way Many Americans Make Ends Meet: Selling Their Plasma

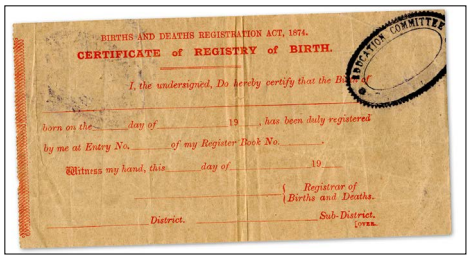
Today, April 2023

Donating plasma for money is a hidden practice and an "essential income source" for college students and the working poor. An estimated 20 million people—almost 8% of the adult U.S. population—may be selling their blood plasma in any given year, Kathleen McLaughlin reports. Plasma donations, along with donations of eggs and sperm, are paid for in the U.S., and prices vary on location and demand, valuing it like a commodity and leading to the U.S. exporting more plasma than soybeans. Although plasma is used to treat rare diseases worldwide, there is still a lack of research on the long-term effects on people who donate multiple times a year.

We Need a Way to Tell Useful Mental Health Tech From Digital Snake Oil

STAT, April 2023

The 1906 Food and Drug Act established the FDA and a framework for regulating and defining the safety and efficacy of new drugs. Digital mental health now includes apps, diagnostics, therapeutics and companies that improve access to medication and psychotherapy. But it is not overseen by a regulator or has established rules or a process for review. Dr. Thomas Insel, former director of the National Institute of Mental Health at NIH, argues the need for regulation in this opinion piece. Dr. Insel believes that the best way forward is a public-private effort established by an authoritative federal agency, like the NIH or the FDA, working with industry and consumer groups to ensure consumer safety and efficacy of new tools.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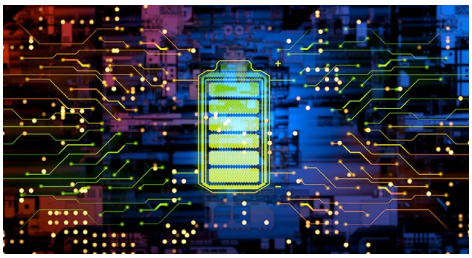
The Lifesaving Power of … Paperwork?

The New York Times Magazine, March 2023

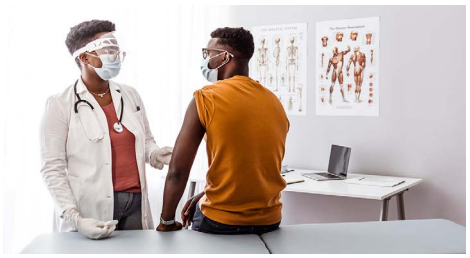
Many low- and middle-income countries have trouble tracking vital statistics and lack well-functioning systems for civil registries. Worldwide, 2 billion people do not have birth certificates, and only half of about 60 million yearly deaths are recorded appropriately. The consequences of this failure are manifold and dire and create distorted realities in public health needs. Fortunately, nonprofits such as Vital Strategies and Bloomberg Philanthropies have initiated multiple programs in rural areas worldwide to improve birth-and-death registries. Verbal-autopsy initiatives are taking root and mobile technology is being employed to bolster record-keeping in remote areas.



A Self-Charging Salt Water Battery for Antitumor Therapy

Science Advances, March 2023

Researchers at Fudan University in Shanghai, China, found a promising way to treat solid tumors through hypoxia (oxygen deficiency). Chemotherapeutic agents, such as hypoxia-activated prodrugs (HAPs) are used in the precision treatment of tumors. But HAPs show unsatisfactory efficacy in most phase 3 clinical studies, due partly to the uneven and inadequate hypoxia in solid tumors. Creating adequate hypoxic intratumoral conditions is challenging. But Huang et al., inspired by the redox reaction of electrode materials in batteries, designed an implantable self-charging battery to persistently regulate oxygen content, pH and reactive oxygen species in the tumor's microenvironment. The sustainable consumption of oxygen provides favorable conditions over 14 days for the HAPs to kill tumor cells while minimizing systemic toxicities and adverse effects.

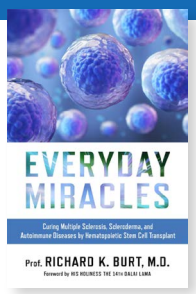


Why Diverse Clinical Trial Participation Matters

The New England Journal of Medicine, April 2023

Historically, women and racial and ethnic minorities have been substantially underrepresented in clinical trials. Although much attention has been on the issue recently, improving diversity in trials may not be accomplished if the goals for doing so are not clearly articulated. Schwartz et al. outline that the goals of increasing diversity in clinical trial participation include earning and building trust, promoting fairness, and generating biomedical knowledge, with the first two being the most important. Recent studies show that inclusive enrollment practices can help build trust while removing obstacles to participation can promote fairness. Increasing diversity may also expand biomedical research, but according to the authors improving trustworthiness and fairness in U.S. health care should be at the forefront.

Updates & Events



- Author Dr. Richard Burt, professor of medicine at Scripps Health Care, published his book *Everyday Miracles: Curing Multiple Sclerosis, Scleroderma, and Autoimmune Diseases by Hematopoietic Stem Cell Transplant*. Alongside powerful patient stories, Dr. Burt shares his journey of developing the hematopoietic stem cell transplant treatment for autoimmune disorders. "These patients are the heroes," Dr. Burt has said. "Their bodies and spirits faced unrelenting disease, and yet they fight valiantly against the suffering and obstacles." Learn more and order the book at bit.ly/Everyday_Miracles

- The World Health Organization launched the Health Inequality Data Repository to track health inequalities across population groups and over time—the most comprehensive global collection of publicly available disaggregated data and evidence on population health and its determinants. Access the repository at who.int/data/inequality-monitor.

- This year's Nobel Prize Summit taking place May 24 to 26 in Washington, DC, will bring together laureates, scientists, policymakers, business leaders and today's youth in an event entitled "Truth, Trust and Hope." The Summit will focus on how misinformation erodes our trust in science and runs the risk of becoming one of the greatest threats to our society today. Speakers include Nobel Prize laureates Elizabeth Blackburn, PhD (Nobel Prize in Physiology or Medicine, 2009), Richard J. Roberts, PhD (Nobel Prize in Physiology or Medicine, 1993); Martin Chalfie, PhD (Nobel Prize in Chemistry, 2008), among others. Learn more and register to attend the event online or in-person at bit.ly/NobelPrizeSummit2023.

- The World Stem Cell Summit and the Regenerative Medicine Essentials Course will go live in 2023 at a combined event in Winston-Salem, NC, on June 5 to 9. The event will provide a comprehensive look at progress to date, current challenges and new hot topics. In association with the newly formed Healthspan Action Coalition, the Summit will focus on the intersection of stem cells, regenerative medicine and the latest advancements relating to biological aging, with an emphasis on reprogramming, regeneration, rejuvenation, discovery platforms, genetics and neuroscience. Learn more and register at worldstemcellsummit.com.

- The Bio International Convention, "Stand Up for Science," will be held from June 5 to 8 in Boston, MA, and will bring together over 14,000 leaders in the biotechnology and pharmaceutical industries. Over 100 sessions will focus on 17 distinct areas from brain health to intellectual property; cell and gene therapy to rare diseases; digital health to diversity, equity and inclusion and emerging opportunities in global markets to regulatory innovation. Learn more and register at bio.org/events/bio-international-convention.

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