Courageous Leadership in Infectious Diseases and Public Health During Challenging Times

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Edited by

Gonzalo Bearman and Priya Nori

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FOREWORD

What does a successful healthcare or public health leader look like in modern times? How do leadership styles change during times of crisis? What lessons are learned from leadership missteps? What distinct legacy do healthcare and public health leaders wish to leave behind?

These are questions we often meditate upon as practicing Infectious Diseases physicians engaged in our hospital and local community's response to public health threats. As academic physicians and journal editors, we are fortunate to work with multiple successful health system leaders, and public health and policy experts, learning tremendous lessons from all of them, which we have compiled in this book.

Herein is a collection of edited interview transcripts from luminaries in healthcare leadership, academic medicine, public health, and policy. These interviews shed light on shared leadership and communication styles and philosophies despite their diverse backgrounds and perspectives. We also reflect on the importance of mentorship and its role in shaping the careers of our contributors.

We are grateful to all the healthcare and public health leaders who contributed to this book and are honored to be a part of their legacy. We also thank Ms. Peggy Andrews-Depew, for expert project management and administrative assistance. Special thank you to our spouses and families for their unwavering love and support.

We dedicate this effort to the current and future workforce in infectious diseases, public health, and pandemic preparedness.

Gonzalo Bearman
Priya Nori

November 2024

CHAPTER 1

DR. HILARY BABCOCK REFLECTS ON HER LEADERSHIP SUPERPOWERS, NOT ADHERING TO A CAREER ROADMAP, AND THE IMPORTANCE OF NOT HOLDING YOURSELF BACK

Hilary Babcock, MD, MPH, Vice President, and Chief Quality Officer, leads quality programs for BJC HealthCare, including oversight of BJC-wide measurement systems and quality improvement initiatives. She also has physician executive responsibility for BJC patient safety, patient experience, regulatory compliance and clinical analytics, as well as infection prevention and occupational health programs.

Dr. Babcock came to Barnes-Jewish Hospital and Washington University School of Medicine in 1994 for internal medicine training. Following a year as Chief Resident, she then completed an Infectious Diseases fellowship and joined the Infectious Diseases faculty at Washington University School of Medicine in 2002 and was promoted to full professor in 2019. She became the assistant director of occupational health in 2003 at Barnes-Jewish Hospital and later medical director of occupational infectious diseases for Barnes-Jewish Hospital and St. Louis Children's Hospital.

In 2010, Dr. Babcock was appointed medical director of the BJC HealthCare systemwide infection prevention and healthcare epidemiology program. She assumed expanded responsibilities for BJC occupational health during the pandemic. She is a past president of the Society for Healthcare Epidemiology of America and is the SHEA liaison to the CDC Healthcare Infection Control Practices Advisory Committee (HICPAC), where she formerly served as committee co-chair (1).

As Vice President and Chief Quality Officer, your days are long and taxing. How do you physically and mentally build yourself up each day, and what is your daily routine?

I'm not someone who leaps out of bed at 4 in the morning to do lots of things in advance of going to work. I get up, have a little bit of breakfast, and then I head off to work, and that's pretty much it. In terms of mentally getting myself ready, I do like to look at my whole week on Sunday nights and have things ready for the week. Each evening, I also look at my schedule for the next day. Most of my days are packed with back-to-back meetings so I don't always have a lot of grounding during the day. Therefore, a mental map is helpful as I get ready for each day.

What was your motivation to pursue healthcare leadership and how did this align with your mission as a physician?

A lot of women state that they weren't necessarily pursuing a leadership track and that they just kept doing their jobs and interesting opportunities arose, which they then seized upon. I do feel like women undersell themselves a little in the ambition department, but I also feel like this is a very accurate description of how I got here. I've done things I liked, and have tried to do them well, which then led to further opportunities through being present in a way that shows you're engaged, care about your work, and willing to work hard to make things better. I still don't have a very ambitious roadmap for the future. For better or for worse, I'm largely

contented most of the time. I don't have a next step in mind until something interesting comes along, which compels me to try something new. My goals as a healthcare leader align with what drove me to become a physician – to make things better for people. The central question in my role as infection prevention medical director was, “how can I take care of all patients and be sure that we are keeping them safe from infections across the system?” Similarly, as CQO, I have similar goals and just expand the ways that I’m trying to keep patients safe across the whole organization beyond the infection space. I do still see patients and still really love that experience - both the connection with the patients and healthcare workers and seeing in action the systems I’m striving to improve in my leadership roles.

Early on, you pursued a master’s in public health. How has this enhanced your career? How do you collaborate with public health professionals in your current roles?

I pursued a master's in public health during my infectious diseases fellowship to obtain clinical research, epidemiologic investigation, and biostatistics skills. Much of my career involved clinical research collaborations with the Centers for Disease Control and Prevention (CDC) and a public health degree was helpful for that. During COVID, we all interacted with our public health colleagues frequently as we dealt with rapidly evolving information. Currently, I mentor students and interns from our school of public health. Last year, I received many requests for student interviews and truly enjoyed speaking with them about what is possible with a public health degree and how it supported me throughout my career. I’m glad to be able to maintain this connection with public health colleagues. Practically speaking, Infectious Diseases (ID) physicians work with local public health departments frequently to handle outbreaks exposures, emerging infections, etc.

How do you approach managing a large, interdisciplinary team in your current roles?

I now have a big team of people who work for me and who report to me, which is a vastly different experience compared to my prior roles, which did not require as much “people management” to get the job done. In my current role, people management is a large and critical component of the job. I’m not the one doing much of the direct work anymore, instead I’m managing teams of people doing that work and my role is to develop and direct strategy, understand how best to support the team, recruit talent, and ensure they have what they need to be successful. This has been a paradigm shift

for me. Human Resources has been a critical partner in structuring and building teams appropriately. This process has been very eye-opening.

What new skills were necessary as you transitioned from leadership in infection prevention and healthcare epidemiology to occupational health and finally to chief quality officer for BJC HealthCare? How did you acquire these new skills?

In addition to managing large teams of people, the other eye opener was seeing the breadth of scope of quality work that includes not only infection prevention, but a lot of other domains. So, one key step was to take a Chief Quality Officer 6-month course, which was great for networking with others doing the same work and learning how their programs are structured. Another critical lesson learned was to be a leader and decision-maker rather than a content expert. As physicians with ID training, we often feel that our leadership is predicated on our subject matter expertise. But as an ID physician in the role of CQO, I am not an expert on pressure injuries, falls, glycemic management, patient experience, etc. My instinct would have been to lead by becoming a subject matter expert in these areas but instead had to pivot to a different mental framework. The Chief Nursing Officer at my hospital gave me great advice when I started, stating "You are no longer being paid for your subject matter expertise. You are now being paid for your leadership and ability to drive change, get people on board and be an inspirational leader…So, you must stop worrying about knowing everything - you have people for that, and they will help you." That was a difficult adjustment for me, but I quickly saw the value in leading by supporting teams, giving them platforms, and enabling them to do their best work.

You were the president of the Society for Healthcare Epidemiology of America (SHEA) in 2019. How did that experience shape you as a leader?

I loved being president of SHEA. I am obviously a huge SHEA supporter and was thrilled to have the opportunity to meet more members, learn more about the organization, how it works and how we can best support it. It was good timing for me to serve as president in 2019 instead of 2020! Being SHEA president reinforced for me the values of transparency – sharing as much information as possible, broadly, and as frequently as possible, and being a visible and accessible face of the organization so people feel comfortable approaching and talking with you. Adhering to these values will help you do a better job dealing with challenges or gaps in what you're communicating, which you won't know about unless you maintain those

connections. Transparency and communication are closely aligned. I don't think it's possible to over-communicate about critical issues. Someone I work with recently said, "unless people are telling you to please stop, you have not over-communicated." It's rare that people say, "I've heard enough on that topic." More than likely you're always finding some group who says "Wait, what? When did that happen?" and you think "I've been talking about this for 6 months!" So, as you can see, it's always better to be transparent and reiterate the message repeatedly. The other thing I learned as SHEA president was the value of a solid team of staff members and of an amazing board full of dedicated, smart people who make you look good and make it easier to be an effective leader. Lastly, all leaders must feel comfortable rising to the challenge of communicating to large groups of people. You must be clear and concise but also transparent when you don't have all the answers and need to search for more information and follow up.

You have led through numerous public health crises like COVID, Mpox, antimicrobial resistance, and the resurgence of vaccine-preventable illnesses to name a few. What was your biggest takeaway from these crises and how did you evolve as a leader as a result?

The lessons I learned as SHEA president were super helpful and reinforced throughout COVID, which was obviously the biggest public health crisis of our lifetimes so far. The lessons were similar – transparency, accessibility, authenticity, and communicating as much as you can. Importantly, being very clear about what information you have, which is helping to drive decisions moment-to-moment, and what you don't know is crucial, and will allow you to adjust decisions later. People will be less likely to say that you're "flip flopping" or don't know what you're talking about. There were times in healthcare during COVID when we communicated decisions out of context or without communicating the next steps. This led people to feel forgotten, unheard, and not included. So, clarity and sharing as much as you can is the key lesson we need to remember for future crises. From a health system perspective, if we can come together around shared goals then we can move faster and build more consensus and consistency. COVID showed us that.

What do you think are the biggest threats to healthcare and how can we brace for these? How can we better bridge all facets of healthcare and public health to build better reliance?

In the United States, I think our biggest challenge is that the structure of our healthcare system and financial incentives have allowed people to remain

vulnerable, uninsured, or under-insured. Our system allows people to be literally bankrupted by the costs of healthcare. We've divorced the cost of care from the actual services being provided and pay more for conditions that could have been prevented and would have cost less if identified and managed earlier. All these things are driving huge disparities in our population. Unfortunately, given the state of politics right now, I don't know how we're going to address this. It's a huge problem that drives everything, including our inability to have more consistent messaging and planning around public health issues like vaccine misinformation, transmissible diseases, antimicrobial resistance. Our current incentive structure is contributing to antimicrobial resistance by increasing reimbursement around more complex diagnoses associated with antibiotic prescriptions. A friend and colleague of mine had upper respiratory symptoms but her home antigen test for COVID was negative. Her symptoms progressed and she finally went to an urgent care where she tested positive for COVID and left with a prescription for an inhaler, steroids, and a Z-pack! She was told by the urgent care doctor that the antibiotics were preventative, so she won't develop pneumonia in the future. Yet, she was not offered Paxlovid, which we know works directly against SARS-CoV-2 and is grossly underutilized. This is one illustrative case but there are many others of the system working in negative ways and not providing patients with the care they need.

In terms of healthcare resilience, sadly, the same financial incentives are not built in to support redundancy of staffing, hospital beds, or resources. The entire system is built with no cushion or give. We also overtax our healthcare workers with more tasks, more checkboxes, and more documentation, asking them to capture every single diagnosis for higher reimbursement. It's all driven by money. If we had a system where we didn't have to pay insurance companies billions of dollars for their executives, everyone might just get the care they need. The financial incentive structure is a huge barrier to improving health across the country. It also takes away from our mission and calling that motivates healthcare workers to continue doing our jobs without burnout and moral injury. I worry a lot about this.

If you could communicate with your younger self, what lessons would you share in terms of successful leadership qualities and pitfalls to avoid?

The first thing I would tell my younger self is that when people offer you opportunities, you should take them, or at least examine them very carefully. Be sure that they align with your goals and values. If it's something you're interested in, that has value, and you should seize that opportunity. This

advice is particularly important for women, who might say no to things preemptively because they're worried about existing responsibilities, like having a family, childcare needs, needs of their partner, etc. All these things are conditional, so you should instead say "if it works right now and its something I enjoy, then I will go for it." You will figure it all out as you go along, but don't say no now in anticipation of conditional things. You should never be the one holding yourself back. When I was pregnant with my third child, it was about the time I was up for academic promotion. I decided it was not a suitable time and decided not to pursue it until two years later, which had big implications for my career. I lost out on two years of a pay increase, title advancement, and eventual promotion to full professor because I held myself back. I would give my younger self that advice as well.

Throughout your leadership tenure, you've mentored and sponsored numerous individuals, several who are now also leaders in healthcare. Why is this important to you and how has mentoring made you better?

It's important to me because people did it for me. As the saying goes, once you reach the top of the ladder, you turn around and give a hand to the person following behind you. I benefited from lots of opportunities in my career and want to be a person who is helping others advance in their careers as well. You learn something from everyone that you work with and mentor or support in some way. Jennie Kwon (2) has been a huge help to me in many ways. During COVID, we bonded over the mutual frustration of watching others outside the incident command center publishing instead of us. She said, "We are no longer going to let this happen…I'll take care of it." She wrote proposals, stayed on top of the timelines and deliverables, and found opportunities for us to expand our work. Her assistance and collaboration were transformational.

Finally, how do you unwind each day, and what books or podcasts are you currently consuming that you'd recommend to our readers?

I am an introvert who spends my entire day in meetings with other people. So, I need a lot of quiet when I get home. In an ideal world, if I get home while it's still light out, I will go for a walk around the block. Then I'll make a simple dinner, have a glass of wine, and read the paper, which I get physically delivered every day. I like to do the crossword puzzle. I also enjoy reading murder mysteries and occasionally, nonfiction work related to leadership. I will plug one book that I love, called *4000 Weeks: Time Management for Mortals* by Oliver Burkeman (3). 4000 weeks is the

average human lifespan, which when put in weeks, somehow feels a lot shorter. His perspective is that there is no way to do everything, so you must change your mindset and really think about what has the most value for you and how are you going to get that done? The book blew my mind, and I've recommended it to numerous friends and colleagues who've recommended it to others.

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CHAPTER 2

DR. DIDIER PITTET SAYS, "GO FOR IT, INFECTIOUS DISEASES IS A MOST BEAUTIFUL CAREER"

Didier Pittet is an infectious diseases expert and the director of the Infection Control Program and WHO Collaborating Centre on Patient Safety, University Hospital of Geneva, Geneva, Switzerland. Since 2005, Pittet is also the Lead Adviser of the World Health Organization (WHO) Global Patient Safety Challenge "Clean Care is Safer Care" and African Partnerships for Patient Safety. In 2007 Didier Pittet received the Honorary Commander of the Order of the British Empire (CBE) in recognition of his services related to the prevention of healthcare-associated infections in the United Kingdom.

Please provide a brief overview of your background and experience in the field of infection prevention and control.

Well, first of all, I was trained in internal medicine in Geneva. Then I had the privilege of receiving comprehensive training in infectious disease, also in Geneva, with Professor Francis Waldvogel, who is very well known. It was truly a great school for infectious diseases and medicine, and it was a very important time in my career. I also trained in public health, humanitarian medicine, and tropical diseases because I completed a Master's in Public Health (MPH) and Tropical Diseases Medicine. After that, I went to Africa, specifically to several countries; the longest time I spent was almost nine months in Cameroon, but I also worked in several other countries in Africa, as well as in some lower-resource economies in Latin America and Asia.

Then I pursued an advanced fellowship in infection prevention and control in Iowa City, Iowa, with Dick Wenzel and the team there. I stayed for three years, conducting research and, of course, clinical infection prevention and control. After that, I returned to Geneva in 1992, where I was in charge of an infection control program that did not previously exist. I created the Infection Prevention and Control Program at the University of Geneva Hospitals, which was a 3,000-bed hospital—very large, the largest in Switzerland—with all subspecialties of medicine. This was very interesting for an epidemiologist and, of course, quite challenging for infection prevention and control. That's about it.

What inspired you to pursue a career focusing on hand hygiene within infection control as that later was your focus?

Well, at first, my inspiration came from a very strong clinical background in internal medicine and infectious diseases. We are talking about 11 months per year of clinical duties. During those clinical duties, you see many very sick patients. You encounter patients whom you are treating for cancer, who are surviving cancer, but then getting a very unfortunate healthcare-associated infection from an IV line or something that is preventable. I guess that was my first source of not only encouragement but also the motivation to pursue infection prevention and control.

I even remember our pancreas transplant program in Geneva, which was one of the earliest in Europe. Unfortunately, we lost our first two patients due to infections. All of this stemmed from avoidable issues related to IV-line infections. This was the first momentum for me to go into infection prevention and control.

I then built my career in infectious diseases and went to a university for infection prevention and control. At that time, infection prevention and control did not exist in Europe; it was more about microbiology and healthcare-associated hygiene. Surveillance of infections was not conducted. When I returned to Geneva, despite what I had learned in the U.S., I conducted the very first prevalence study to assess infections in my own hospital. I found a rate of 18%, which I could not believe. I repeated the study with the help of infection control nurses in my group, and we found comparable results—between 15% and 18% across four prevalence studies.

Looking at what was happening in the field, I realized that hand hygiene compliance was extremely poor. I began to think about it and conducted my first epidemiological study, which we undertook early on. We observed day and night, on weekdays and weekends, across all hospital wards to assess the compliance of healthcare workers—whether they were nurses, doctors, or assistants. We found that compliance was around 40%.

Before this, I had reviewed the literature, but there was no systematic study on the topic, although some studies indicated low compliance. We realized, using epidemiological models, that the greater the intensity of patient care, the lower the compliance. The more opportunities there were for hand hygiene, the less compliance there was.

So, we decided to act. This led to the idea of using alcohol-based hand rubs instead of soap and water for handwashing. We introduced this alcohol-based hand rub at the bedside, providing quite simple instructions along with a multimodal strategy to change behavior. As a result, we were able to improve hand hygiene compliance. In parallel, we observed significant decreases in infection rates.

Thus, my passion for hand hygiene grew. The inspiration to understand more, to be creative, and to change attitudes and behaviors became important, which in turn propelled the momentum for research in my team. That is how it all began.

What were the biggest challenges to improving hand hygiene?

Well, I would say the very first challenge was to understand that with soap and water handwashing, you cannot succeed because healthcare workers simply do not have the time to wash their hands properly. That was the first step. Then the question became: how can you change behavior? I was fortunate to have discussions with two or three influential people. First, I spoke with a psychologist at the university who was working on tobacco

smoking. He did not know anything about hand hygiene, but he told me, "If you want to change behavior in humans, you need to use a multimodal strategy." He emphasized the importance of using multiple elements, not just one, to effect behavioral change.

I reflected on this and realized that the alcohol-based hand rub solution that was already available was not effective and quite aggressive for hands. So, I approached a pharmacist, who was the second person I consulted, and told him that I wanted a high-quality alcohol-based hand rub that was well-tolerated and effective at killing bacteria. The pharmacist was excited, and together we developed a new formulation that was better tolerated. We evaluated this formulation among our group of infection control nurses, and once we had a satisfactory product, we decided to promote it.

To promote it, we returned to the psychologist's idea of a multimodal strategy. We started monitoring hand hygiene compliance and providing feedback on the results—especially when they were poor. We implemented this throughout the entire hospital. Additionally, we used posters around the hospital to raise awareness about hand hygiene and launched a campaign. We ensured there was a strong safety culture within the institution to support the promotion of hand hygiene. This multimodal strategy proved to be effective, improving hand hygiene compliance from around 40% to almost 70%.

In the meantime, we monitored healthcare-associated infections, which dropped by 50% over three years. We also significantly reduced antimicrobial resistance, decreasing the prevalence of multiresistant bacteria by 90% in that same timeframe. It was clear that the strategy was working.

Of course, we faced challenges along the way, including resistance to change. Initially, some people argued that alcohol would damage their hands, while soap and water can also be harsh. A well-formulated alcohol-based hand rub with emollients is much better for hand care. We had to address these concerns gradually to ensure that people would embrace the strategy. Eventually, it became successful; interest grew, and it worked quite well.

Estimates suggest that this campaign, which was endorsed by the World Health Organization, is currently saving between 5 and 8 million lives each year globally. In Geneva, we demonstrated that we were saving lives with the campaign from 1995 to 1999, albeit a smaller number in a developed country. However, on a global scale, we are saving lives all over the world with this initiative.

Your work is international. How do you approach collaboration and partnerships with other healthcare professionals, non-governmental organizations, researchers and even governments to advance not only hand hygiene but infection control?

Well, what was helpful was that, yes, after five years into the campaign, the World Health Organization reached out. At the beginning, we were visited in Geneva by colleagues from all over the world. They came because we published our results in The Lancet in the year 2000. From this publication, people came to Geneva, and they were excited about what we were doing, trying to see if we could demonstrate that our results were replicable—and yes, we did it. We succeeded with groups of hospitals around the world.

Then, the World Health Organization approached us and asked whether we would be willing to lead the so-called 1st Global Patient Safety Challenge, which was initiated in 2005 as part of the campaign for patient safety at WHO. The Department of Patient Safety was created in 2004, and in 2005, there was a need for a global challenge. So, we agreed, recognizing that there was a global challenge to improve hand hygiene, and we had a solution that could help.

What we did was ensure that the formulation we created could be made available all over the world. After several modifications, we gave it to the WHO, making sure that the product could not be patented and could be produced everywhere. This was a prerequisite to ensure that we could introduce a successful multimodal strategy globally.

The multimodal strategy we developed in Geneva was translated, adapted, and made universal with the help of experts from around the globe. I had the privilege of leading this large, international expert group. Gradually, we maintained contact with different stakeholders. To return to your earlier question, we interacted not only with physicians and nurses but also with engineers, educators, promoters, and individuals interested in campaigning, safety culture, behavior science, and behavior change.

What resulted from this was a large, multidisciplinary, and multifaceted promotion strategy that was then universalized by WHO, translated into multiple languages, and began to work globally. The reason we quickly connected with public health and Ministries of Health was that, at the time, healthcare-associated infections were not widely discussed in many countries. There was no large campaign in any country because people preferred not to address the problem; they wanted it to remain hidden.

So, we decided to speak directly to the Ministers of Health and ask them to sign a pledge for the campaign, recognizing the importance of healthcare-associated infections, using the tools we developed, and sharing the results with us. And that is what happened. This is why we started to work with many public health doctors and Ministries of Health to promote the campaign worldwide. NGOs also came to help us and participated, making the strategy very universal.

If you had to summarize the top three tips for someone trying to do public health on an international level, what would you say?

I would say the first thing is to base your understanding on the science related to the field you want to work in, whether it is hand hygiene, infection prevention and control (IPC), or another area. You need to ground your expertise in scientific evidence. When you speak about numbers, they should be real; they should not be invented or merely estimated.

Then, of course, the next challenge in public health campaigning is endorsement. The implementation strategy you use is key because successful implementation is crucial for success. You cannot just tell people to use something. For example, when it comes to alcohol-based hand rubs, if you simply give it to people and say, "Please use it," nothing will happen. You need a well-thought-out implementation strategy. We derived an entire implementation strategy from the guidelines we developed for WHO to promote hand hygiene, and it works very well.

The third element would be to encourage creativity. Let people endorse what you have given them and allow them to adapt and be creative, producing their own ideas to ensure that the campaign becomes their campaign. I like to say, "Adapt to adopt." This means you should let people modify the strategies so they can adopt them more effectively.

Yes, that is a very memorable comment!

You must adapt to adopt.

What role do you think technology can play in enhancing infection control measures and hand hygiene in healthcare settings?

Well technology is very important. There is no question that it is key. Technology is evolving every day, and we have new tools emerging. When I started in infection control, we had to conduct surveillance for healthcare-associated infections by going to the bedside and counting infections

according to specific criteria. Nowadays, we have computers, intelligent systems, and even artificial intelligence that can assist us. This is great, and we need to continue using these powerful tools.

Importantly, however, these tools are complementary. In other words, they will never replace advanced and well-trained infection prevention and control (IPC) doctors, nurses, or practitioners. They will complement our methods of conducting surveillance, acting, and understanding the outcomes of our interventions. Additionally, they will free up more time for us. If artificial intelligence can solve a task that would take you two hours to complete in just ten minutes—possibly while you enjoy your coffee—then you will have more time for education, motivation, and creativity with healthcare workers. It will also help us implement strategies, as the technology alone will never be advanced enough to manage the detailed implementation needed for success in IPC.

I really enjoy seeing this development because it allows us more time for other tasks, leading to better interventions through improved education and implementation strategies. This, in turn, would enhance our success. I am a strong believer in technology, but I think we should focus on what is most important for us and what gives us more time to help healthcare workers apply guidelines in their daily practice, enabling them to be better at the bedside.

Can you share a memorable experience from your career that highlights the impact of your work?

Well, I have several stories, but the ones that resonate most strongly with me are from developing countries. I remember our first prevalence study of infections in Benin, Africa. It was the first time such a study was conducted in the country, and the average infection rate was around 64%, which is exceedingly high. We decided to introduce a national hand hygiene promotion campaign. However, we did not have the resources to implement the campaign across the entire country, so we focused on one-third of it, in one region.

After the campaign was introduced, we repeated the prevalence study one year later. In that region, the infection rate had dropped to 18%, while it remained between 50% and 60% in the other regions of Benin. For me, that was spectacular. I realized that we had enhanced the capacity to save lives. I had known it was possible, but I did not expect such significant results in a modest country.

I also witnessed similar success in Uganda, where we introduced locally produced alcohol-based hand rubs. We created a high-standard formulation in a large sugar factory, using part (leftovers) of the sugarcane for distillation. The alcohol produced there met high-quality standards, comparable to anywhere in the world. We implemented a multimodal strategy in various locations, but one memorable place was a large pediatric ward filled with children. We saw a remarkable 80% reduction in sepsis mortality within just nine months. Of course, we started with a high sepsis mortality rate, but these experiences are some of the most memorable for me.

There are other significant stories from developed countries, including my own hospital and others, but those are for another time.

You see the future of infection, prevention and control evolving, especially considering global health crises, such as the COVID-19 pandemic. What have we learned and what will happen next?

We have learned a lot, but I wish we could have learned more. Let me explain, as you may have seen. Even before COVID, many IPC program directors were offered key positions in medicine, public health, and various fields within ministries of health, and that advanced experience might really drive you to exceedingly high responsibilities or even to a career like mine, which now focuses more on health diplomacy. In this role, you visit countries and meet with the Ministry of Health and their teams, asking, "What are the priorities?" Then you might suggest changes, and if you are lucky and the country is able to implement them, it happens.

To come back to your question about the COVID pandemic, we have learned a lot. Many CEOs who previously ignored IPC came to understand its importance. They realized they needed to allocate more resources to IPC. We learned that the IPC doctor was at the center of the decision-making process during the health crisis response. We understood the necessity of being at the center of that process to speed it up.

We also recognized, unfortunately, that there was a shortage of masks worldwide, as more than 90% of masks were produced in just one region of the world, and we now need to diversify production. We have understood many things, but we did not grasp everything we needed to. We failed to understand that our society should function and live as a cohesive unit. As we say in French, we need to create a fair society (“Faire société”). This means coming together so that we all understand the reasons behind actions

like vaccination. I got vaccinated not only to protect myself but also to protect my neighbors and the elderly people living nearby, as well as those I meet.

Unfortunately, we did not fully learn to address these issues. Politicians have realized that they cannot manage crises alone; they need to listen to scientists. In some countries around the world, however, politicians did not heed scientific advice, making significant mistakes that led to many preventable deaths. Despite having the best incentives, the best IPC practices, the best public health strategies, and the most skilled modelers available to provide timely advice, they faltered.

We need to learn from our mistakes, and the lessons we take from this experience should guide us toward a more collective approach, utilizing more collective intelligence than we have in our daily lives and practices across all fields, whether in medicine, economics, education, or other areas.

What advice would you give the healthcare professionals seeking a career in either infection prevention, public health, or infectious diseases?

First of all, I would say, go for it. I mean, go for it! That is the most beautiful career of which you can dream. Of course, I am totally biased, but I have said this to many people, and I can see them today, very happy all over the world. So, I am very convinced that if you want to pursue this path, and if you feel it would be good for you, go for it!

But what does success mean? It's not just about having an academic career; it's about being happy and ensuring that your patients are happy with you as a doctor, whether you are a private physician running a clinic or an academic doctor who ends up as the Dean of the Faculty of Medicine or even the Chancellor of the University. Success can be defined differently for each of us.

To achieve this, make sure you benefit from a comprehensive and high-level training, because training is important. If you need to spend one more year or two more years in training, do it. I trained at a time when AIDS emerged, and as a junior faculty member, I had to learn a lot about this new topic. I do not regret taking the time to understand it and see patients. That is just one example.

Even if your training takes longer than you anticipated, ensure you receive the best training possible. I would say, and this is my third piece of advice,

seek out the best mentors. Mentors are key in medicine, as well as in other fields. I had the privilege of having a unique mentor in Geneva who encouraged me to focus on infection control. He also suggested I should do research, and I initially resisted, but I ended up doing a lot of research, and he was right.

He advised me to go to the U.S. to better understand a field that was less developed in Europe than in the U.S at the time. So, I followed his guidance. When I returned, he helped me set up the program and gave me his full confidence. Today, this mentor is still alive, and we continue to mentor each other because we meet regularly. I have also had the privilege of mentoring others.

As you gain experience, your mentors may expand beyond your initial circle. For example, in infectious disease and infection control, your mentors may start with those in your field, but they can grow to include figures like Nelson Mandela, who inspire you and provide motivation to continue striving for excellence.

So, these are the three key points: Go for this most beautiful career, ensure you receive high-level training, follow the advice of your mentors, and, in turn, become a mentor yourself.

CHAPTER 3

DR. CYNTHIA LEBRON: WORKING TO END RACIAL AND ETHNIC DISPARITIES IN MATERNAL AND CHILD HEALTH, FINDING THE PEOPLE YOU REALLY WANT TO WORK WITH, AND MEETING ABUELAS WHERE THEY ARE

Cynthia LeBron PhD, MPH is a prevention scientist whose research lies at the intersection of racial/ethnic health disparities in obesity and maternal and child health. She began her research career as a community health worker (promotora de salud) at the Miami Healthy Heart Initiative for Hispanics with diabetes. She went on to work as a senior clinical research coordinator at the Jay Weiss Institute for Health Equity at Sylvester Comprehensive Cancer Center and community liaison at the Miami Clinical

and Translational Science Institute. She earned both her MPH and her PhD in prevention science and community health from UM's Miller School of Medicine. Honors include 2019-2020 APHA Maternal and Child Health Student Fellow, Edward Alexander Bouchet Graduate Honor Society, the Society for Prevention Research's Early Career Prevention Scientist Training Program, and NHLBI PRIDE Program. Dr. Lebron serves as President (2022-2025) of the APHA Latino Caucus for Public Health (https://www.apha.org/apha-communities/caucuses/latino-caucus).

Dr. Lebron's NIH-funded pre-doctoral research focused on pre-and perinatal exposures as risk factors for early childhood-onset obesity in a racially/ethnically diverse population. Research projects she currently leads range from Hispanic family-based interventions to equitable distribution of resources for pregnant and breastfeeding mothers. She is also developing and implementing a social media-based, bilingual, multigenerational entertainment-education intervention for primiparous Hispanic pregnant women and their mothers to prevent the onset of obesity in infants.

Tell us about your journey from community health worker to prevention scientist focusing on racial and ethnic health disparities, obesity, and maternal and child health. What were the biggest obstacles for you?

I obtained my undergraduate degree at Florida International University in health sciences. I was on a roller coaster; I was unsure of what I wanted to do professionally. For a while, I thought I wanted to be a dentist, so I shadowed a dentist for a long time but eventually realized it was not for me. I also worked as a pharmacy tech at a CVS in Hialeah, which was a unique experience because the population was Hispanic, and I was already learning about community health in that setting. After working as a pharmacy tech for two years while completing my bachelor's, I realized that I did not want to be a pharmacist either. So, I was left not knowing what I wanted to do. After leaving the pharmacy, I started tutoring and became a substitute teacher at a high school. Accidentally, I built up experience in teaching. I got a temporary teaching certificate in Florida and started teaching 8th grade science, then later moved to teaching 10th-grade geometry.

While I enjoyed teaching, I knew I did not want to do it forever. I wanted to do something in healthcare but did not want to be a clinician. I reflected on my education and realized that I enjoyed my research methods class, the last class I took before graduating. I liked the idea of doing research that could develop into programs and interventions. However, coming from a

working-class family—my father was a truck driver, and my mother worked her way up in hospital administration—it did not occur to me that research was a career option.

After some exploration, I learned that a master's in public health (MPH) would be a good path for pursuing health research. I quit my job and started at the MPH program at the University of Miami. Since I could not be without a job, I continued tutoring while in graduate school, but I was also looking for other opportunities. Eventually, a TA told me about a principal investigator (PI), Dr. Olveen Carrasquillo, who was looking for a community health worker for an NIH-funded project. (1) In hindsight, all these unrelated experiences made me perfect for a community health worker position. I had experience teaching, tutoring, working in pharmacies, and interacting with the Hispanic community in Hialeah. I got the job, which involved working with Hispanics who had diabetes to prevent cardiovascular disease. I went into people's homes to discuss their diabetes management, such as medication adherence, exercise, and diet. This was a unique opportunity to see how people lived.

Often, diabetes was just one of many issues participants faced. Some lived in multi-generational households, some had recently immigrated and lived in crowded conditions, and many had trouble reading their mail. I would translate mail for them, help them with immigration, housing, and employment issues—diabetes was often 10th on their list of concerns. This experience got me interested in health disparities and community-based research.

We were supposed to be helping participants with their diabetes, but we ended up helping them with many other aspects of their lives, like getting doctor's appointments, navigating the public health system, or even building resumes. We realized that, although the clinical outcomes like A1C levels and cholesterol were important, we were also supporting participants in ways the study did not capture. For example, their medication adherence improved partly because we accompanied them to doctor's appointments and helped them communicate with healthcare providers.

Could you elaborate on the focus of your NIH-funded research on pre- and perinatal exposures as risk factors for early childhood onset obesity in a diverse population?

I have a complicated relationship with my dissertation, which I supposed to complete using Women, Infants and Children program data, but I learned

the hard way that working with the State of Florida is not always easy. (2) I had to pivot and work with electronic medical record (EMR) data, which presented its own challenges and wasn't set up for research, so it was complicated to clean up and analyze. I had to answer the questions I could answer, not necessarily the ones I wanted. One major question I wanted to answer was: Can we use EMR data to predict obesity risk? For instance, could certain factors raise red flags, signaling that a child might be at risk for obesity later in life, leading to potential early interventions?

For the most part, I did find useful data in the EMR, but the system wasn't set up for that kind of analysis. Take breastfeeding, for example. Yes, breastfeeding is collected in the EMR, and it's a well-known protective factor against many health outcomes, including obesity. However, it's not collected systematically. There is no button to check whether a child was breastfed; it might just be a note in the system. So, creating a flag for risk factors like breastfeeding is tricky when we do not even collect the information consistently. The EMR system would need coordination between many departments to implement something like that. Nevertheless, these questions made me explore maternal and child health more deeply, which eventually became my forte.

How would you measure the success of your interventions thus far, particularly around breastfeeding and obesity prevention?

Well, I am still in the early stages of my career, although I've been working in public health for over 10 years. It is hard to measure success right now because I am still developing the intervention. Now, I am creating an intervention for Hispanic mothers and grandmothers. This came from research I conducted, including interviews with Hispanic mothers of children under five years old. I conducted about 30 interviews, half in English and half in Spanish. What became clear is that grandmothers, or "abuelas," play a huge role in the health of the grandchild, but they are often not treated as such. I kept hearing two things: mothers love their mothers, but they also see them as a challenge. For instance, modern guidelines recommend putting babies to sleep on their backs, but grandmothers might argue, "You slept on your belly, and you're fine." These conflicts show both generations want what is best for the baby but have different ideas about how to achieve it. This led me to the idea of involving both the mother and grandmother in an intervention, ideally in an online support group. Everything points to a platform like WhatsApp, as that is where many Hispanic mothers and grandmothers are. So, instead of creating a new app, I want to meet them where they already are.