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Collaborating for a Cure: Emerging Studies & the Future of Oncology

Dr. Sands:
Welcome to *Project Oncology* on ReachMD. I'm Dr. Jacob Sands, and here to give us a bird's eye view of cancer care around the world is Dr. Lawrence Shulman, the Deputy Director of Clinical Services, Director of the Center of Global Cancer Medicine at the University of Pennsylvania, a senior oncology advisor to Partners In Health, among multiple other leadership roles. Dr. Shulman, it is a pleasure to have you on the program.

Dr. Shulman:
Thanks for having me.

Dr. Sands:
Now, Dr. Shulman, I want to start out first congratulating you. You did win a humanitarian award from ASCO for your work in Rwanda and Haiti. Of course, that's a wonderful honor for a lot of work. So, let's start with an overview of your work there. What were some of the challenges and highlights of these important accomplishments?

Dr. Shulman:
Well, you know, I've known Paul Farmer for now about 30 years. He was my intern at the Brigham in Boston many, many years ago, and he and I thought about trying to provide cancer care in resource-constrained settings where he worked over the 90's and into the 2000's. And then, in the late 2000's, he asked me to develop cancer programs in both Rwanda and Haiti. And we did it. I first went to Rwanda, though, in 2011, with Paul, and at that time, there was not a single cancer doctor in the country, and there was basically no cancer care. So that if you developed cancer, your likelihood of dying was essentially 100% unless you had the financial wherewithal to travel outside of the country. So we were starting from scratch, and we worked with the Minister of Health, Dr. Agnes Binagwaho, and our colleagues at Butaro Hospital, which is a rural hospital in northern Rwanda, and began to put together a cancer program. We dedicated that program in July of 2012, so it took us about a year to put everything into place and again to see patients at that time. Our godfather, if you will, for the program was former President Bill Clinton, who helped fundraise with us and helped us to establish the program, and in fact, came to the dedication with his daughter, Chelsea, in July of 2012. Since then, we've seen nearly 2,000 new patients a year at our cancer center. It remains the main site of cancer care for the entire country, and we've made great progress, but we still have a long ways to go. We still have very limited resources, but we do the best we can to provide the care and concentrate on diseases that we can cure with therapies that we can afford and bring to Rwanda, or help patients who can be, substantially benefitted through therapies that we have. So we've made some progress, but the work goes on. We still have a long ways to go.

Dr. Sands:
So, one of the challenges that I imagine with oncology, as opposed to something surgical, for example, is just the ongoing care. Was there an infrastructure already in place that you were able to work with? Did you help create an infrastructure? How do these patients get monitored after an initial visit, or is it kind of ongoing people on the ground?

Dr. Shulman:
That's a great question. So, Butaro Hospital, which is where our cancer center is, is a functioning hospital with doctors, nurses, and other healthcare professionals there, but they had no cancer program. And we started by training the doctors and nurses to, in fact, understand cancer, and as importantly, to understand the therapies that we use to treat our patients, because cancer therapy, as you know, is toxic. It requires very skilled care to both administer the treatment and to follow the patients after they've received the treatment and this was an ongoing process. It was helped by the fact that we were able to have U.S. trained oncology nurses, basically full-time in our cancer center in Rwanda, and they were there basically from March of 2012 until March of 2020, when we had to pull them out

because of the COVID pandemic. And that's been a huge help. In addition, U.S. oncologists, like myself, frequently visited and accompanied our colleagues there and helped them to become proficient in the diagnosis and the treatment of cancer and how to follow the patients. I will say, though, that it's a challenge. Our hospital is nowhere near a paved road. It's not easy to get to. We do provide some transportation for our patients, but most of our patients are very poor. The care is provided free of charge for them, so poverty should not be an obstacle for receiving potentially curative cancer therapy, and that's one of our philosophies that we hold by. But sometimes it can take two days for a patient to get from their home to our hospital. They don't have cars. They need to have public transportation or transportation that we provide, but that really changes the way that you manage patients. You know, you don't have them come in unless it's really important. You think twice about when they really do need to come in. You try to manage them remotely as much as you can and you really develop a different system of care than we have in the U.S. And having done that, I think we've been able to provide safe and effective care for our patients, many of whom are alive and presumably cured of their disease.

Dr. Sands:
So, what are some of the most impactful projects currently underway? That can be some related to your work in Haiti or Rwanda, or other projects around the globe. But what are some of the more impactful projects currently underway or being developed that you're excited about?

Dr. Shulman:
So, there are a couple things. One is, you know, we've worked hard in Rwanda. We've worked hard in Haiti. We're proud of what we do. We realize, though, that we're really at the beginning of a journey, not at the end of a journey. But we've worked in isolation, and that's not a good thing. Cancer care, both in the U.S. and elsewhere in the world, is a team sport. You know, we go stronger together, we work together, we make discoveries together, we move the field further together. And so we've thought about ways to bring the people who are interested in helping to provide cancer care in resource-constrained settings, whether it's sub-Saharan Africa, or the Caribbean, or southeast Asia, wanting to bring them together for us to form a group that we can work together and advance the field. So the organization CIRGO, or Coalition For Implementation Research in Global Oncology, is a newly-formed organization, really in the embryonic stages that has many key players in it. It has the National Cancer Institute, the American Society of Clinical Oncology, the American Society of Clinical Pathologists, and multiple U.S. academic centers, like Penn, Dana-Farber, the Fred Hutchinson Cancer Center, Indiana University, the University of California San Francisco, just to name a few. And we've started to meet on a regular basis. We've started to fundraise. We've actually given out now eight grants to programs in sub-Saharan Africa to help to advance the work that we're doing. Three of those grants went to my program in Rwanda. And so I think coming together, rather than all of us just sort of doing our own thing out there is really an important strategy, and hopefully will move the field much more quickly than it has. The other thing that I would say is that cancer medicines are very expensive. And that's in the news all the time, it's the fastest-increasing part of the health care sector in the U.S. We have many, many wonderful new drugs, but they're very expensive, and frankly, since we provide the cancer care in both Rwanda and Haiti for free, because our patients can't afford it otherwise, we have to figure out ways to pay for that, and that's been a huge problem. There is an organization that we work very closely with called the Max Foundation, based in Seattle, and their CEO, Pat Garcia-Gonzalez, has worked tirelessly over the last decade to get very important cancer medicines to our sites, donated free of charge. And that's made a huge difference. And just as an example, chronic myeloid leukemia, which is a disease now that is extremely treatable in the U.S., with targeted therapy, a drug called imatinib, which, has to be taken for life, and yet, if you take it, your life expectancy is the same in the U.S. as somebody who doesn't have cancer at all. Highly effective therapy, until a couple of years ago, when it went off patent, the cost in the U.S. was $40,000 a year for individual patients. So in the treatment of chronic myeloid leukemia, we give this medicine. Patients then have a normal life expectancy, but in the U.S. it's $40,000 per patient per year, for life. Something we could not afford. The drug was made by Novartis, and the Max Foundation and Novartis partnered together to bring this medicine to our patients free of charge. And there currently are, worldwide, 25,000 patients on imatinib for chronic myeloid leukemia, all free of charge, medicine donated by Novartis. And though it's off-patent now, Novartis has guaranteed us they will continue to supply it free of charge indefinitely. Those are the types of partnerships that really matter. Those are the types of partnerships that allow us to bring state-of-the-art therapy to our patients who could otherwise not afford it or not have access to it.

Dr. Sands:
Yeah, so that topic of cost is obviously a really big one, I'd say across the globe, really. How wonderful that you're getting drug donated, but it also raises the topic of biosimilars. Can you speak to the value of biosimilars, or the topic of biosimilars? I think it's kind of a complex one that could be debated in various forms, but what light are you able to shed on the value of biosimilars and the international market and discussion around biosimilars?

Dr. Shulman:
So the issue of biosimilars is a complicated one. If I use a particular example, trastuzumab, prior to it going off-patent in the U.S., a year of trastuzumab cost $40,000. The drug company that made it offered us a discount price for Rwanda of $20,000 per patient, which is

still highly unaffordable for us. It's now off-patent, and there are a number of biosimilars, but the biosimilars are really no more affordable. It is a complicated medicine to make. The companies are required to go through equivalency trials, so it's expensive to develop, and so these are not inexpensive, generic-type medications that can occur for chemicals, if you will. The biologics are still much more expensive to make, and the biosimilars – though less expensive than the original drug – are not much less expensive, and still often highly unaffordable. We've never had trastuzumab, in either Rwanda or Haiti, and I can tell you exactly how many breast cancer patients die every year in Rwanda, who would not have died if we had trastuzumab, so the lack of access to that leads to preventable deaths. But we actually just have gotten it donated, and hopefully within the next month or two, we'll be able to make it available to our patients because of the generosity of one of our partners.

Dr. Sands:
You spoke about the importance of collaboration. And along that topic of collaboration, 2020 was a unique year, with a worldwide pandemic that really impacted every corner of the globe to some level, and varying degrees in different regions and countries. But broadly speaking, how did COVID impact the oncology care globally, and what are some of the challenges that are worth highlighting? And maybe, ways of overcoming some of those challenges that are also worth discussing.

Dr. Shulman:
I think one way to think about the effects of the COVID pandemic, and this is true in the U.S. and high-income countries, as well as low-income countries, is any time there's a major disruption in the world, it actually makes it easier to change things. Change is hard. Turning the ship is hard, but when something to the degree that the COVID pandemic has been occurs, people don't have a choice. They need to do things differently. It presented loss of obstacles. We had to pull all of our ex-pats out of Haiti, and out of Rwanda, and out of every other country where we were working, and do everything remotely, which is not so easy. So that was a downside to it. It also was more difficult to get supplies into the country, because transportation was cut down, flights were cancelled and just moving equipment and medicines back and forth across the globe became more challenging. On the other hand, in Rwanda, for instance, we had a lot of resistance to bringing different programs together, to working with the ministry to try to develop different delivery models for cancer care. And when the pandemic happened, we didn't have any choice. And in fact, things that we had spent two years not being able to do happened literally within ten days, where we brought programs together, we opened up new cancer treatment facilities, literally within days, because transportation in the country was restricted, patients couldn't get to the cancer center, and so on.

Dr. Sands:
That's a great way to wrap up our discussion, and I want to thank my guest, Dr. Lawrence Shulman, for joining me today. Dr. Shulman, absolute pleasure having you on the program.

Dr. Shulman:
Thanks so much for having me and for highlighting what I think are these really, really important issues and opportunities for us all. So thank you very much.

Dr. Sands:
I'm Dr. Jacob Sands. To access this and episodes in our series, visit reachmd.com/projectoncology, where you can Be Part of the Knowledge. Thanks for listening.