Ruth Adewuya, MD (host):

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Ruth Adewuya, MD (host):

This episode is part of our hot topics mini series. And today I will be chatting with Dr. Sherry Wren on the topic of humanitarian aid. Professor Wren serves as the Stanford School of Medicine vice chair for surgery, director of global surgery at the Center for Innovation in Global Health and director of surgery at the Palo Alto Veterans Health Care System. She is honorary professor in the Centre for Trauma at the London School of Medicine, Queen Mary University of London, and adjunct professor at the Uniformed Health Services University in Bethesda, Maryland. Her clinical practice is in general surgery with a fellowship in hepatobiliary surgery. Her current clinical focus is on gastrointestinal malignancy and surgical robotics, with research interest being in surgical outcomes, robotics, cancer, and global and humanitarian surgery. She has also worked with Doctors Without Borders in conflict settings in Africa. Dr. Wren, thank you for chatting with me today.

Sherry Wren, MD (guest speaker):

Thank you so much for the invitation. Really exciting to be able to talk about this.

Ruth Adewuya, MD (host):

To get us started, when did you first become involved in humanitarian surgery and what drew you to this field?

Sherry Wren, MD (guest speaker):

When I was in college, I had this recollection of going to the Peace Corps booth and being told that I had no skills and maybe come back at some point in time when I had some skills. I trained for nine years in surgery, got my first real job when I was about 35, and then started academics. You're on the academic pathway and you have to have your research and everything be ready for promotion. And it was when I knew that I was basically going to become a professor it gave me time to say, "Okay, I've wanted to do this for a long time and step back and look for opportunities to serve in a different capacity."

Sherry Wren, MD (guest speaker):

I've spent most of my career working in safety net hospitals in the United States, so mission has always been very important to me. And I wanted to look at how do you work in low resource settings and, as a trained surgeon, how do you do that is actually not easy. So started looking at different agencies and put in my application for Doctors Without Borders, otherwise known around the world as MSF, Médecins Sans Frontières. Ended up interviewing with them, and because of that high school and college French that I had learned, ended up getting an assignment fairly quickly, because there was a lot of conflict happening in Francophone Africa. Having high school French, and being a surgeon, I had the right skillset.

Ruth Adewuya, MD (host):

You have pointed out that 11% of the global disease burden can be treated with surgery. Can you give our listeners some background on which conditions most commonly benefit from surgery in low income countries?

Sherry Wren, MD (guest speaker):

When people think about low and middle resourced countries, everybody thinks about infectious diseases, TB, malaria, HIV, diarrhea, pneumonia. What people don't really think about is really two other big categories. First and foremost is injury. Injury is one of the most common problems around the world. And if you look at injury in low and middle income countries, about 90% of all the deaths from injury occur in those countries. So that could be anything from you're walking on the street and you're struck by an auto or you fall, we see this all the time in kids where they're picking fruit from trees and they fall and they break a bone, to in conflict zones obviously you could have injuries from conflict, and then the non-communicable diseases.

Sherry Wren, MD (guest speaker):

And what we've really learned, especially as we're in this 21st century, is deaths from non-communicable diseases have way overtaken death from infectious diseases. So as you control infectious disease, especially in the young, people now live long enough to have their diabetes, have their cancers, have their vascular disease and have all these other diseases that surgery often plays a role in diagnosing or treating. Think about cancer, there's some cancers that strike the very young, but in general you have to age enough to be able to get your risk for cancers. So that's why surgery really has a huge role in the health of a population.

Ruth Adewuya, MD (host):

And how have you seen the surgical needs differ in countries that are plagued by conflict, and how do you adapt to meet those demands?

Sherry Wren, MD (guest speaker):

A community in conflict has additional needs. First and foremost, if you can leave the area, many physicians and nurses and healthcare personnel, if they have resources, exit the area, which then leaves even fewer healthcare workers available. And if you already have a not well functioning healthcare structure, you now have just these incredible stresses put upon it. Regions in conflict have now new injuries from the conflict, whether that be explosives, gunshots, et cetera, but actually the majority of work you end up doing is around emergency surgical needs of the population. People are still going to need to have babies and have obstructed labor. They're still going to die of postpartum hemorrhage if they don't have access to a surgeon, people are still going to get struck while walking on the street and have open fractures. People are still going to get appendicitis and perforations from typhoid if you don't have clean water.

Sherry Wren, MD (guest speaker):

So you take not just the needs of a population in its baseline state, but now you superimpose conflict on it. And conflict also leaves a lot of people getting displaced. So if conflict comes into your area, you could have hundreds of thousands of people displaced and now they're out of their homes, they're in temporary structures or they're literally mobile and moving along. So one of the countries that I've worked in, The Democratic Republic of Congo, which has been in conflict for a long time, at any point in

time, they had near three quarters of a million displaced people. So then you have people in temporary shelters and you get infections and all these things, it's just a massive disruption to a population.

Ruth Adewuya, MD (host):

What you just mentioned underscores why there's a very low percentage of surgeries that take place in conflict ridden countries or low income countries, I think the percentage is 3.5, fast forward to our reality with COVID-19, how has the pandemic exacerbated these challenges?

Sherry Wren, MD (guest speaker):

I do a lot of work within Africa. I'm actually a fellow and the overseas representative for what's called The College of Surgeons of East, Central and Southern Africa. This is a 14 country consortium that runs training programs in 17 countries on the continent of Africa. And what the whole goal is for this college is to increase surgeons within their own countries. So if you were to look here in Palo Alto and look at the phone book, you would find hundreds of surgeons. There're very few countries in Africa that have more than one surgeon per 100,000 people. I know many people who may be the only surgeon for more than a million people. So it's not just conflict, it's Africa and Southeast Asia are where you have your highest amount of surgical deficit in workforce.

Sherry Wren, MD (guest speaker):

Now, I have absolutely worked with African surgeons in conflict zones, people who've stayed in their countries or people who've even come from other countries to work there, but the numbers are so low that this exacerbates the problems. COVID has been so tough in many ways. I personally know a number of physicians in Africa who have died during this time. They have less than one orthopedic surgeon for 100,000 people and you are just that orthopedic surgeon that died. You've now really hurt the community when it comes time to access. There's also been significant disruptions. In the beginning was their PPE. I have colleagues, even for family members, trying to get oxygen and all these things. So yes, it has disrupted surgical care immensely. My worry is that we've made a lot of gains in the last 10 years trying to address these issues and I really truly hope that COVID has not erased those.

Ruth Adewuya, MD (host):

Surgery is often neglected as a basic need when we are considering healthcare services in low income settings, as you mentioned, people usually think about infectious disease, and I believe surgery wasn't included in the UN Millennium Development goals. Why do you think surgery is overlooked?

Sherry Wren, MD (guest speaker):

I think there's a perception that surgery is too expensive. A number of years ago, I gave a TEDx Talk. I was trialing my talk on some Stanford students, law students and business students, and it made me realize that when you think about high resource countries, surgery has not been as big a deal. You go in, you get your gallbladder taken out, you're home six hours later. And when they were thinking about surgery, what became very obvious is that they had this thing that we were talking about transplantation and cosmetic surgery and things like that, and not really recognizing things like hernia disease or appendicitis or fractures or C-sections. Now, there's a really good data to show that surgery, when you measure it by disability adjusted life years dialysis, surgery is one of the most effective things you can do for the health of a nation. It's way cheaper than, actually, HIV interventions. Now, there are some other challenges, surgery you have to have resources like a place to do it, materials to do it, human capital to do it.

Sherry Wren, MD (guest speaker):

So you have to have anesthesia, you have to have a surgeon and then you have to have a place where people can stay while they recover. If you look at the Millennium Development Goals, I would say surgery maps to them in some ways. You're supposed to have maternal and child health. How do you have maternal and child health if women are going to die from postpartum hemorrhage or obstructed labor, and you have dead babies? If you can't get a C-section, you can't have maternal and child health. The World Bank actually does have some surgical indicators that they're tracking, which I think is one of those first steps to getting it more and more recognized. There was a World Health Assembly resolution in 2015 that really called out that surgery was supposed to be part of a primary care type of package for health of a nation. So you do see ministries of health constructing what's called National Surgical, Obstetric, and Anesthesia Plans, NSOAPs, as people are more connected, I think it's really hard how do you justify to your population that you can't provide these services.

Ruth Adewuya, MD (host):

Going back to the comment you made earlier about how you could have an orthopedic surgeon serving thousands of people in the area, because surgeons in low income countries are so limited, do you find that they must be trained in a far greater range of procedures than surgeons here in the US? And if so, how have you expanded your skillset to fit this need of training them? And maybe what have you learned from your own experience?

Sherry Wren, MD (guest speaker):

The surgical trainees in their first and second years, whether they be orthopedics, neurosurgeons, plastics, general surgeons, urologists, or whatever, they're actually all expected to know about C-sections, fractures, basic management of breast cancer, all those things, so I would say their curriculum in many ways is much broader than what we have for our trainees in the United States. In other countries, you have both physicians, meaning non-trained surgeons, doing operations, as well as a number of countries have invested in what's called non-physician clinicians, and actually take people out of high school, put them through a training program and teach them a cadre of life saving operations, and then they go out into the rural areas and do this. Sierra Leone has a big program for that. Mozambique has a program. This hope is as we train more physicians and as you get more physicians there, people's scope of practices should be able to come down to more of an orthopedic surgeon doing orthopedics.

Sherry Wren, MD (guest speaker):

When I went out and I was the only surgeon, it was really eye opening. I had trained at a time though in the United States, I started my training in 1986, and at that time we actually did training in orthopedics, urology, plastics. We didn't have ER doctors, so I had been an ER doctor. I had, I think, a little bit easier time shifting towards this broader range than one of our trainees who's been trained in the last 10 or 15 years where we don't do those trainings anymore. And that's one of the reasons why I started our course all those years ago, was I recognized that surgeons from high resource countries now don't necessarily have the skills to go into these low resource settings where you may be the only surgeon and have to have a much broader range. The things that we cover always start out with getting people in what I call getting them in the mood.

Sherry Wren, MD (guest speaker):

It is very different to switch your mentality and realize now you're low resource. I literally have a picture of the supply cabinet of what the operating room looks like when you're coming from the United States where we're a culture of primacy and it's 18 and you can do whatever, and now you're in a setting where an operative decision maybe being made, often, if you're a woman, it's not being made by you, but being made by somebody else. We give people some didactic case based lectures on things that tropical diseases, because we don't see surgical tropical disease in the United States, one of the largest problems overseas is orthopedic trauma and orthopedic care. And if you're not an orthopedic person, just doing this refresher course on basic fracture management and dislocation. Wounds are a huge issue, wound and burn care. You can't send people to the pharmacy to buy things and you don't have all of the things that we have here to treat wounds.

Sherry Wren, MD (guest speaker):

So we literally talk about how you can boil t-shirts and put honey or sugar as a dressing on a wound, because those might be the resources. Then we do a full day of hands on skills where we focus on emergency plastic surgery things, so burns, skin grafts, burn contracture treatment, how to do hand injuries because so many people are farmers and they get a lot of hand injuries, basic trauma for neurosurgical trauma. We now teach actually how to do a primary hernia repair without mesh because everybody in the United States gets mesh and or fracture management, so traction pins and external fixation devices. Then we spend a huge amount of time in obstetrics, how to do a cesarean section, how to get an impacted head out if somebody's been in labor for a long time, how to do an emergency hysterectomy for postpartum hemorrhage, how to do other means to avoid having to do a hysterectomy, tubal pregnancies.

Ruth Adewuya, MD (host):

How do you handle the frustrations of not having the resources to treat a patient maybe as quickly or the way you would in the US?

Sherry Wren, MD (guest speaker):

I would say the first time I worked overseas, that was incredibly hard. And then what you also realize is you can learn a lot from your local partners, because this is where they work. I've taken tricks that I've learned in low resource settings and brought them back to high resource settings. There's two kinds of work that you can do overseas. There are many groups that go out and they basically bring a high resource setting to a low resource area. They have a plane that flies around that you can do complex eye surgery in. They're transporting basically slice of American OR and putting it there, and they've got all the supplies and all those things that you need, as opposed to you are having to literally use what is available. I enjoy that adaptation, other people it's like, "No, I want it to be like it is at home."

Sherry Wren, MD (guest speaker):

I'll never forget the first time I had an elderly gentleman, nobody knows how old they are, it was clear that he had tuberculosis of his lung, but he also had an infected pleural effusion. And I needed to put a chest tube in him and I didn't know medical French, I get a chest drain, a chest tube, and I just assumed because they have a chest tube that they have the things that we use in the United States to hook them up to, which is we call Pleur-evac. And so I put this tube in, I get this big gush of pus and air and then I'm asking for the Pleur-evac and they're looking at me and I'm so I tried in French, I'm like, "A Pleur-evac," with a little French accent. That didn't work. And I'm like, "Okay, what you put on the end of this tube?"

Sherry Wren, MD (guest speaker):

And then they hand me a bag that we use to put to urinary catheters, a [inaudible 00:19:59] bag, and I'm like, "Whoa, okay. There's some problems here." We had this bottle system years ago. Do you have the bottles? No. So the problem is he was draining air from his lung tube, and as air gets into that system it causes an airlock in the back that causes air pressure to back up and he would drop his blood pressure. So I was like, "God, what am I going to do?" So finally I realized that I could create my own puss Pleur-evac. He was draining so much fluid out of his chest that I inverted the bag so there was a fluid column and then I vented where you would empty the urine out so now the air could bubble up through the puss and come up through the exit. I enjoyed trying to figure out how to do that. Is that for everybody? No, but I still maintain my puss Pleur-evac was an awesome invention.

Ruth Adewuya, MD (host):

I can hear what you're saying, that it takes a certain type of person. I also wanted to spend some time talking about this initiative that you have in Zimbabwe, you're training women as surgeons, but also supporting women, generally, overseas. Can you talk about that initiative a little bit more?

Sherry Wren, MD (guest speaker):

We have a program affiliation with the University of Zimbabwe College of Health Sciences. I started that in 2012 and it meant that we would have faculty go over and help with courses and trainings that they would want. In return, one of our trainees, one of our residents would go and actually be able to work there. And we've also hosted some of their trainees and their faculty coming here. I am very used to being the first woman surgeon sometimes that people have seen. That has happened to me in Asia, in Africa. When I trained, only about 4% of surgeons in the United States were women in general surgery. I was the only woman in my intern class. I had never seen a woman surgeon. I would do teaching rounds with all the students and the trainees, and they had never seen a woman professor. And so the women realized now, wow, you could become a surgeon. And the women's students there started, they called it DREAMS, that's the name of their society because they could now dream about becoming surgeons.

Sherry Wren, MD (guest speaker):

We would do trainings, I'll never forget, we went and got cow intestines. We taught them how to sew anastomosis so they could cure their cow. It was really great to see all these women really interested and also have a venue for them to talk about their challenges. That also has gotten to be a much bigger program, through COSECSA there's a woman in SURG-Africa program that I am an incredibly proud supporter of. So COSECSA actually has a gender equality statement in their mission and really do try to encourage women to come in. One of my proudest awards was their inaugural, SheforShe Award. So I have mentored and have colleagues now who are their firsts. The first woman's urologist in Zambia, the first cardiothoracic, the first pediatric surgeon, it is imperative that we don't ignore half of the population. If you have less than one surgeon per 100,000, how do you ignore women in the workforce? It has been a great joy, absolute joy.

Ruth Adewuya, MD (host):

How do you establish trust with patients when you're recommending interventions that they may not be familiar with, or even accounting for some of those local cultural beliefs that are different from Western medicine?

Sherry Wren, MD (guest speaker):

First of all, you're never going to likely speak the language of the person that you're talking to. Some of these countries have hundreds of languages. So you're really relying upon the local staff. The first time I had a problem where a woman was instructed labor and she really needed a cesarean section and her husband said no. She's not in control of her body. Who consents for an operation? It could be a spouse. It could be the elder of your family. It's not always that person at all. That one is really hard as an American to get used to. And you just have to respect, this is their culture. So what did I do in this case? I went and found the head nurse who was a man and I'm like, "You go talk to that guy and tell him why need to do this."

Sherry Wren, MD (guest speaker):

Sometimes you get religious leaders involved. It could also be really painful culturally. I was working in this area in Chad, we had about 60,000 refugees in the area, I'm the only surgeon, and this young mother who looks like... I don't know, she looks like she's probably 14, 15, brings a three to four year old boy in because he had this growth around his anus, anal condyloma, you know that somebody's sexually abusing this child. I go to my head nurse, who's a man, my French is really not that great, I'm like, "In my country, we would call the police," because I didn't know how to say child supportive services or whatever, because in the States there's no child that would be sent home with evidence of sexual abuse until some... This is a reportable thing. And he responds to me that there are no homosexuals in Chad, which now tells me that he knows exactly what this is.

Sherry Wren, MD (guest speaker):

They're like, "You do nothing. He has to be cared for by his family." It haunts me, I sent a child home to be abused. But what I learned is you just, literally, you have to ask. Amputations are a big thing. There's such a cultural prohibition against amputations. Not that anybody in the United States says, "Please give me an amputation." I would have multiple conversations with different levels of relatives or religious people trying to get people to understand and come to a mutual decision about an amputation. In one place I worked, every time we cut something out, the nurse would put it on some paper and take it out and show it to the family, because it turns out that there was sham surgery that gets done sometimes. You can't impose your will on other people. In the United States, if a patient is a Jehovah's witness and tells me that they would rather die than have a blood transfusion, do I intellectually understand that? No, I will never understand that. That's not my faith. I don't get it. Will I honor their wishes? Yes.

Ruth Adewuya, MD (host):

As we wrap up this conversation, what have you learned from your international humanitarian work that you have applied to your research, to your practice and advocacy in the United States?

Sherry Wren, MD (guest speaker):

From the standpoint of advocacy and research, I really wanted to look at lessons learned in over 20 years of war where great advances have come in the care of patients and how do you apply that into humanitarian care and conflict zones. The humanitarian care and conflict is a very small carve out of the bigger problem, but it's one I'm very interested in and was very happy that we were able to get an international consortium together. And in 2019, we actually published a guiding framework for what humanitarian care and conflict should look like. Part of that framework was then adapted into a WHO directive. I'm now extending that work and have some ongoing research looking at how do you look at developing a mortality risk score so you could help identify who might need a few more resources. Then

I look at the capacity building education, relationships, and everything that I do with my partners in Africa.

Sherry Wren, MD (guest speaker):

I've learned that I have brought back things. First of all, my God, we waste so much in the United States. We don't need to do all these things. I became a lab minimalist. Guess what? You can actually take care of patients without having to draw their bloods every day, and having been a patient, it's nice not to have your blood drawn every day. So I think that there's this interesting give and take.

Ruth Adewuya, MD (host):

I just want to thank you so much for the work that you do, the training that you do, creating opportunities for other clinicians here in the US, but also other clinicians in Africa and in Asia. Thank you so much for chatting with me today. This was incredible.

Sherry Wren, MD (guest speaker):

Thanks for the opportunity.

Ruth Adewuya, MD (host):

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