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Welcome to Yale Cancer Answers with doctors Anees Chagpar, Susan Higgins and Steven Chagpar. I am Bruce Barber. Yale Cancer Answers is our way of providing you with the most up-to-date information on cancer care by welcoming oncologists and cancer specialists who are on the forefront of the battle to fight cancer. This week Dr. Anees Chagpar welcomes Dr. Edward Trimble. Dr. Trimble is Director of the Center for Global Health at the National Cancer Institute, and Dr. Chagpar is Director of the Breast Center at Smilow Cancer Hospital.

Chagpar Tell us a little bit more about the Center for Global Health at the NCI. What exactly do you do? What is your mission?

Trimble We were set up 5 years ago by Dr. Harold Varmus, who was Director of the NCI at that point, and he wanted to strengthen what the NCI was doing globally. We have always done cancer research with a global eye. We have always worked with scientists from around the world. Dr. Varmus wanted to increase that activity and see if we could actually make sure that the research got translated into public policy. Our goals are to help ensure that we have a strong group of young people coming up who are trained to do research in global health, that we have a strong and possible portfolio of global health research as a global community and that the research results actually get translated into public policy.

Chagpar Dr. Trimble, a lot of our listeners might be thinking you are at the NCI. You are the National Cancer Institute of the United States and you are funded by taxpayer dollars. Why is global health important? Why not invest those dollars for research here at home?

Trimble Well, we find that there are different patterns of cancer around the world. Sometimes we can study things better outside the United States than we can inside the United States. We are a nation of immigrants and we have people from all over the world living here, people of different genetics, different environmental exposures, and so if we work with other countries around the world, we can understand cancer better.

Chagpar And you find that some of the work that you do in other countries can actually translate into low-resource populations here at home?

Trimble Absolutely. As you know, we have a very diverse population, we have rich people and poor people, we have people in rural settings who have difficulty accessing healthcare,

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and some of the things that we have learned working in other countries can

definitely help us in the United States.

Chagpar Tell us a little bit more about the different cancers that you see around the world. Are they similar to what we see here in the US or are they different?

Trimble Many of them are similar. For example, the lung cancer that you get from smoking cigarettes is similar around the world. Cervical cancer, which is caused by HPV is very similar around the world, but there are some unusual patterns, some of which we understand, some of which we do not. In India, for example, both men and women, often of lower socioeconomic status, chew tobacco, often with betel-quid or areca nut. So, they have a very high incidence of oral cancer. We do not see that much in the United States, so that is something that is unique really to South Asia and East Asia, Southeast Asia. There are also some patterns, for example, Guatemala has very high rates of liver cancer and gastric cancer. We are still trying to figure out what causes that. In Chile, they have very high rates of gallbladder cancer, and again we do not quite understand why, so we are working with our colleagues in Chile to see if we can better understand what causes that high rate of gallbladder cancer there.

Chagpar When people think about global health, many people think about diseases like HIV, they think about malaria, they think about TB, for a lot of people cancer is not on the radar when they think about global health. Should it be?

Trimble Absolutely. As we start working with countries around the world and helping them improve their systems of health surveillance, they have found that things like diabetes and heart disease and stroke and cancer actually can be real problems for them, and in many of the what we could call developing countries, when you look at the data, they actually have more deaths from cancer, from heart disease, from stroke, from diabetes, from road traffic injury, than they do from infectious diseases.

Chagpar And is that because we have made so many advances in the infectious diseases in these countries that people are living longer, so that they actually are dying of cancers?

Trimble In part. We definitely have made progress in reducing the number of women dying in childbirth, of deaths under age 5 as well as from infectious diseases, we have better treatment now for TB, for malaria, for HIV, so people are living longer. We also know that in many of these countries that have a problem with infectious disease, that some of those infections can go on to cause cancers such as hepatitis B and C, such as human

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Chagpar What do you think are the top 5 priorities for reducing global cancer burden around the world?

Trimble I think tobacco cancer would be first on everybody's list; in part because we know that stopping chewing tobacco, stopping smoking tobacco can reduce the risk of lung cancer, oral cancer, esophageal cancer, stomach cancer, head and neck cancer, cervical cancer – there are so many cancers associated with tobacco. So, probably tobacco is the most important thing. Also, because decreasing smoking can decrease your risk of heart disease, of chronic lung disease. So, I would put tobacco highest on my list. Next, I would put encouraging a healthy lifestyle, healthy diet, activity, decreasing obesity because we know obesity is a major risk factor again for diabetes, for heart disease, as well as for cancer. Unfortunately, as people have grown more prosperous, they have adopted an unhealthy western lifestyle with inactivity and too many processed foods. So, we need to get people exercising, we need to get people eating more of a healthy diet. Also, number three on my list would be rolling out what we know in terms of prevention. We have talked about prevention through tobacco control, but we also have vaccines that can prevent cancer. Hepatitis B vaccine will prevent infection with hepatitis B, which is one of the major causes of liver cancer and the new human papillomavirus vaccine will prevent cervical cancer as well, as about half of cases of oropharyngeal cancer and anal cancer, which are also associated with HPV infection. so, rolling out those vaccines are particularly important. The next I would put on my list is making screening, early diagnosis and treatment available. We know we have good screening for cervical cancer, for colon cancer, we can diagnose breast cancer early, so if we can help countries move towards population-based screening programs for cervical cancer and colorectal cancer, where appropriate, screening programs for breast cancer through mammography, if mammography is not appropriate for the country, then we would certainly recommend timely evaluation of breast masses to make sure that we can diagnose breast cancer early.

Chagpar And finally, one more. Trimble One more, okay, I think we know that we can improve cancer outcomes by health system strengthening, making sure that there are good surgeons, good anesthesiologists, good pathologists, there is access to medicines, access to radiation therapy, access to good laboratory medicine. And this can help with road traffic injury, it can help with fixing broken arms, it can help with treatment of diabetes and heart

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Chagpar It seems like at least the first four on your list are things that we talk about here in the US as well, right? Tobacco control, improving healthy lifestyles, getting screened early for cancers that are screenable and vaccines. These are things that we talk about here on Yale Cancer Answers all the time,

in terms of things that we can do here in our population. What makes it different or difficult in other parts of the world? Certainly, the last issue of not having the infrastructure or the health systems certainly plays into that I would think.

Trimble Well, I would argue that the fifth issue is one that we confront every day in the US too because we have people who do not have health insurance, we have people who live long distances from health clinics, we have people that have difficulty complying with their recommendations for screening or getting their prescriptions filled. So, I think we have to learn from other countries as to how we can strengthen our own healthcare system. So, I think it is all we share problems and we can learn from many countries around the world.

Chagpar What things make different countries unique and what are some of the nuances that you find in low-to-middle income countries that make cancer control more difficult or different than it is here.

Trimble I mentioned that how in South and East Asia, people chew tobacco, often mixed with betel quid and areca nut, so that is something that we do not see here and so we do not have a whole lot of expertise, but we are working with those countries to try to figure out how to help people stop chewing tobacco quid or whatever and how to screen for oral cancer. So, that is something that we do not see here that we do see elsewhere. Another issue that is fascinating from epidemiologic perspective is the role of another infection – Epstein-Barr virus. In the US, we see it in most often as mononucleosis. That is something that is transmitted among adolescents and college kids, the nick name is the kissing disease or whatever, and it is relatively benign. I mean, it is people feel fatigue for some months but then it goes away and they live their lives without any problems. But in Africa, we see much earlier transmission EBV, and there, it is associated with an increased risk of Burkitt lymphoma and so we do not know quite why that is. There is some interaction with malaria exposure as well. In East Asia, Epstein-Barr virus is associated with an increased risk of nasopharyngeal and we just do not understand why is the same virus doing different things in different parts of the world. It is a mystery, but it is something that we can work together with partners around the world to help us figure out that mystery.

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Chagpar What about the cultural issues? I mean, it seems to me in talking to some of my colleagues from around the world, particularly for example, talking to some of colleagues in Ghana, where when somebody is suspected of having a mass or not feeling well or whatever, they would go to the traditional healer first and there seems to be at least in this person's perception a distrust between traditional healers and western medicine, such that you go to the traditional healer and the traditional healer will say, "well, do not go to the western medicine doctor, you will die," and the truth of the matter is that they present so late that is actually because there are limited therapies to treat these cancers. I want

to get your feedback on that and so much more, but first, we need to take a short break for a medical minute. Please stay tuned to learn more about global oncology with my guest, Dr. Edward Trimble.

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Chagpar Welcome back to Yale Cancer Answers. This is Dr. Anees Chagpar, and I am joined tonight by my guest, Dr. Edward Trimble. We are talking about global oncology, and right before the break, I was thinking about the differences between healthcare, particularly as it pertains to cancer here in the US versus in low-to-middle income countries and was thinking about one of the comments that a colleague of mine in Ghana had mentioned, which is the fact that most people will go to their traditional healers in Ghana, and there tends to be a mistrust between traditional healers and western medicine such that this colleague of mine told that when people go to the traditional healer, they will be told now do not go to the western medicine people, you will die, and the fact is that about 87% of people, particularly with breast cancer in

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Ghana present with stage III or IV disease, which tends to be not as well treatable as people who present with earlier stage disease and so it tends to become a self-fulfilling prophecy. You do not go to the doctor because you are going to die if you go to the doctor and you have got late stage, you still die and so on and on it goes. So, it fuels this mistrust. How do we address those kinds of issues, Dr. Trimble?

Trimble Well, I think there are two ways; one is, we need to look at the US experience and certainly there was a terrible stigma associated with cancer in the US, and we have overcome that stigma in part because of the experience of people like Nancy Reagan and Happy Rockefeller, I mean prominent who had breast cancer and were willing to talk about the fact that they have breast

cancer, and they survived their breast cancer treatment. So, I think having a population of people who are willing to talk about their cancer experience and the fact that they are alive and well now is really important, both in the US, in other developed countries and in the developing world. So, I think one issue is you have to find the people who are willing to speak out about the fact that cancer is not a death sentence and that I was treated for cancer and now I am here and I am living my life. I think we also have to have a more effective partnership with traditional medical practitioners. It is important to remember that often the traditional healers are available, they are close by, they speak the same language as the patient and they do not charge an arm and a leg for treatment. So, it is understandable that you would go to see the traditional medicine doctor first. So, I think it is important for us not to consider those people as the enemy, but rather as potential partners that we need to educate them about the signs and symptoms of cancer, when it is appropriate to refer for breast mass, for vaginal bleeding, for rectal bleeding so that they can get a timely diagnosis of cancer. It is also important to remember that we can use traditional medicine practitioners to help maintain quality of life and patient adherence when people are undergoing standard treatment. We know there are side effects from cancer. Well, some of the traditional medicine practices may have a placebo effect, some of them may have a real effect. We certainly routinely refer our patients now for things like acupuncture and yoga. Those were considered weird and bizarre, but we did the studies to show that they help improve symptoms of people who are undergoing cancer therapy. So, we also have a partnership with a number of countries, particularly China and India, to help evaluate traditional medicine practices to see, can they improve quality of life, can they treat a person's symptoms? In some cases, we find that traditional medicine has therapeutic effect. As you know, one of the things that we use to treat malaria, Artemisinin, was derived from traditional Chinese medicine for fever. I think a number of the medicines we routinely use today – aspirin, morphine, a number of the chemotherapeutic agents such as Taxol, came from natural products. We have to admit that there are some good things out there in traditional medicine and traditional medical practice that we need to look at very carefully.

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Chagpar I think that the idea of the partnership in really understanding that people's disease occurs within a cultural context, and so they trust the traditional healers as part of that cultural milieu and how we embrace that culture and weave a partnership that becomes very important. And it seems to me that there are other issues that are specific in low-to-middle income countries that make it more difficult, and do not know how you overcome some of these things. So, for example, another friend of mine was in Ghana and noted running water is not common in all places in Ghana. I had a friend of mine who was a surgeon from Nigeria, who came to visit and was telling me that electricity is unreliable. Then, I said to her I said so, what do you do when you are in the operating

room when the electricity goes out, light is useful when operating, and she said “well, everybody pulls out their cell phone.” But how do you overcome some of those issues in terms of infrastructure and is that really a mandate that the cancer community has to take on or is that another place where it really is important to forge partnerships to build infrastructure so that you can improve global health.

Trimble I think it is the latter. I think we have to build partnerships, surgery is a modality we use every day to treat cancer, but it also a modality we need to treat broken bones or to do an appendectomy or to do a C-section. So, we have to work with the global health community, how do we improve access to surgery and access to anesthesia, how do we make sure that there is a functioning blood bank or that there is a laboratory test that can check someone’s hematocrit. So, I think those are bigger issues that have great relevance for cancer, but are not unique to cancer. There are some novel technologies in terms of solar power devices that can help power an anesthesia machine that can help power a Bovie. So, I think there are some approaches that are very promising in terms of for use in low resource settings. But as you said, we need electricity, I mean it is hard to practice medicine nowadays without source of electricity, without clean water, without the right surgical instruments, without the right medicine, so we have to figure out how can we learn from our friends in private industry, let us say, having friends in the US military on supply chain management, so we actually get and have all the supplies we need to diagnose cancer, to treat cancer, to help treat the symptoms that people have.

Chagpar The other issue though it seems to me is that when you think about global infrastructure in terms of health systems, hospitals, provision of care, electricity, clean water, much of that relies on the state, the country itself, governmental organizations. Many people or some people say, in these low-to-middle income countries, they have concerns about corruption of governments, lack of progress in terms of moving in those areas. Does the NCI and the US government, in their partnerships with other governmental organizations around the world, have some capacity to help these countries move forward so that they can provide better population health?

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Trimble We work very closely with other parts of the US government, such as USAID, such as USCDC, such as our Department of State, which have very clear guidelines and programs to help improve governance and improve the appropriate use of the facilities, the health budget to make sure that the people are treated as they should be. So, we try to make sure that we help generate the appropriate research to guide what the public health practice should be and then work with partners in terms of making sure that it is implemented and that the governments have made the appropriate commitments. But I think that this is a big issue. The other thought that occurred to me is that we know that in many countries, including the United States, much health care is

delivered by the private sector. So, we need to be working to make sure that the private sector is functioning as effectively as possible, is providing good care and exploring the possibility for public-private partnership. Again, as you were speaking about how to make sure that there is electricity or that the supply is there, we know for example that companies such as Coca Cola can deliver the syrup and the CO2 to almost every place around the world and they do, or Amazon, there is a commercial side of things that knows how to do that supply chain management. What we need to learn from them -- can we use the Coca Cola distribution system to help us get vaccines in the cold chain around the world. So, we need to be creative, to look what else is happening in society.

Chagpar That is an excellent point, I mean when you were talking about the top 5 priorities and we were thinking about #2 was obesity, and I thought there is a McDonalds in every country I know of and yet there is not necessarily optimal healthcare in every country and so how we can learn how to do that better. The other issue is really that healthcare relies on a certain amount of expertise and the other issue tends to be the brain drain. So, people in these countries often are not having the best quality of life, many of these countries are the subject of abject poverty and so bright young students will leave, come to the US, go to Europe get educated and rarely will return back to their countries to provide care, and so many of these countries suffer a shortage of physicians and when you look at the WHO ratio of physician to population, they are well below what is considered to be optimal. Any suggestions for how we can improve that.

Trimble I think it is important that countries understand that they need to treat their doctors and their nurses well. They need to pay them a living wage and they need to make sure that they are working conditions are acceptable and give them a pat on the back for their hard work because it is really hard to deliver good care day in and day out. I was just in Kenya where the doctors are on strike, now in their sixth week of a strike because they were promised a wage to bring them up to a living wage three years ago.

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That wage has not showed up and the doctors are saying “look we cannot afford to put food on the table or send our kids to school, where is this raise that you promised you would give us.” So, yes, you are absolutely right, we do see a brain drain and that will continue to happen unless people are given an appropriate salary and good working conditions.

Chagpar Then, of course, there is a cycle of, we cannot pay you a good wage because the country is very poor, because we have poor health, we have poor health because we do not have a decent workforce. But I think we have some good examples of countries that have invested in workforce development, invested in healthcare and often have a thriving private sector, so there are good private hospitals and clinics as well and decent public hospitals and clinics. I think there are some examples of how countries have made a commitment to look



after their doctors and nurses and build a cadre of community health workers who can help augment what the doctors and nurses do.

Dr. Edward Trimble is Director of the Center for Global Health at the National Cancer Institute. If you have questions, the address is [canceranswers@yale.edu](mailto:canceranswers@yale.edu) and past editions of the program are available in audio and written form at [YaleCancerCenter.org](http://YaleCancerCenter.org). I am Bruce Barber reminding you to tune in each week to learn more about the fight against cancer. You are on WNPR, Connecticut's public media source for news and ideas.