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Treating Multidrug Resistant TB Within and Beyond India's Borders

Dr. Maurice Pickard:
Tuberculosis continues to be a public health epidemic in India especially among the slum dwellers. What challenges do physicians face when treating these patients in the most difficult of circumstances and is progress being made in this area? You're listening to ReachMD XM Radio. The channel for medical professionals.

Welcome to the Clinician's Roundtable and I'm your host, Dr. Maurice Pickard. Joining us today is Dr. Shelly Batra, a practicing gynecologist in New Delhi and president of Operation ASHA, a not-for-profit organization dedicated to fighting tuberculosis. I'm glad you're back to kind of give us progress report.

Dr. Shelly Batra:
Thank you, Maury, for having invited me. I love being here with you.

Dr. Maurice Pickard:
You know Shelly, this is a marvelous opportunity because something that I've wanted to ask you and have not had the opportunity, you were a TV personality, a best selling writer, a very successful gynecologist in New Delhi. And then, about six or seven years ago, you had a change in your whole career path. Did you have an epiphany? Was there some specific event that happened that made you change and start an organization that now is beginning to be a model for not only undeveloped countries but developed countries?

Dr. Shelly Batra:
I'd been working with the slum dwellers for more than a decade before I started work in TB. I had been doing OBG work for them, free surgeries with the help of some like minded colleagues. I moved into TB for two reasons. Number one was I realized that we can put our money and our dollar into a public health problem where the returns will be many fold. As compared to treating one patient for the same amount of time and money, I can have a much greater impact.

And the other reason was that I realized I can get a very high leverage and an extremely high social return on investment of more than three thousand percent by working in tuberculosis because of the free public infrastructure, the free medicines, the free diagnostics. But the biggest reason behind it was the need in my country. Tuberculosis has been around since the time of the pharaohs. It's been 60 years since independence and 60 years of TB drugs.

In spite of that, tuberculosis is an epidemic. Eight million new cases every year and two million new cases in India and I've been talking for three minutes, Maury, and two people have died in my country in these three minutes. Unfortunate but true. Half a million deaths each year. Unbelievable loss to the economy and loss of wages, close to three hundred million dollars per year for TB patients. This is the reason why I moved into TB.

Dr. Maurice Pickard:
How many new cases of tuberculosis every year are there in India? You mentioned a half a million deaths. How many new cases?

Dr. Shelly Batra:
Easily 1.8 million.

Dr. Maurice Pickard:
Could you tell me a little bit about the pediatric population that is represented in your patient population?

Dr. Shelly Batra:
Well, pediatric TB has always been what I describe a disease of darkness because the children, they are hidden from the world. Nobody

wants to see that they are suffering and no one wants to diagnose them. Conventionally, what had happened was that public health authorities decided to go through life with blinkers on. They seem to be suffering from bitemporal hemianopia and refused to look at the children who are suffering for the simple reason that they feel children are not a public health problem at all because they don't produce sputum so they can't infect others, so let's ignore the childhood population of TB. Which is criminal to say the least.

Easily a million children in the world today need treatment for tuberculosis. Easily 10 to 15 percent of all TB patients could be children. The number of deaths are unbelievably high but the number of diagnosis are incredibly low. The reason is, as I have said before, they don't produce enough sputum so we do not have the guidelines to diagnose TB in children. We do not have the technique to diagnose TB in children.

There are no clear cut guidelines. And this is why they keep suffering. Another issue with pediatric TB is that there is a very strong overlap with malnutrition. If you see a child of malnutrition, the symptoms and the appearance are very similar to that of a child with TB. So what came first, the chicken or the egg and whether it's TB or malnutrition or both? It's difficult to decide.

Dr. Maurice Pickard:
When you have an adult patient that has active tuberculosis and there are children in the home, what are the likelihood of that child also having active tuberculosis?

Dr. Shelly Batra:
If there's a patient, an adult of active TB, all children who live in the vicinity should be tested immediately and by immediately, I mean now. It should be done today. And this is part of the Operation ASHA model. You see, children are so susceptible to the disease because their immune systems are not strong enough. They should be regarded as a group of immunocomprimised patients and treated as such.

Dr. Maurice Pickard:
Well, we've talked in the past about that many of the patients that you take care of make less than a dollar a day, that they avoid going to the doctor because of the stigma and also they might lose their job and also they might not even get married because of the stigma of tuberculosis. How do you get that adult patient their medication? And how do you encourage them to bring their children for screening? What is the model that you're using so successfully?

Dr. Shelly Batra:
We are using a community empowerment model and we are utilizing the disadvantaged people to serve their own needs. So what we have done, is we've taken TB treatment to the doorsteps of the disadvantaged. Deep in the urban slums, in temples, in small shops, we've got the DOTS centers. From there, patients can get the medicine at a convenient time without having to miss work and wages.

For example, a shop in the slum area will open early morning for economic reasons and shut down late at night, so patients can get the medicine early morning before going to work. We have a lot of patients who are, well, women who walk out of slums and who go to the well off areas and work as, well, cleaning women. They do the laundry. They do the cooking and so on and so forth. They leave their homes at 6:30 in the morning and they can pick up the medicine from the center near the bus stop from where they have to catch a bus. Similarly, on the way back they can get the medicine. So this is the community model.

For two such centers, we have a full-time employee of Operation ASHA, a counselor, who belongs to the area, who belongs to the community he serves. So he speaks the same language, eats the same food. He lives there. He can find where _____ (06:38) lives which I would not be able to find because there is no house number in the slums. There's no route number and all huts seem to look alike. It's just a maze of dust tracks and every house looks like any other. So this is the community empowerment model.

Added to community empowerment is something new and that is the technology. The Stop TB Partnership which is housed by the WHO has declared DOTS alone is not enough to curb the TB epidemic in high burden countries. And the WHO says electronic data sets are needed to ensure accuracy of data. In our country, the health minister, Ghulam Nabi Azad, declared and it created a sensation when he said so, and it was reported in the Times of India, health data is fudged. This is shameful to say the least. And this is why in Operation ASHA, we are using technology to ensure every dose taken by every patient to prevent default, to prevent MDR-TB, and to ensure accuracy of data.

Dr. Maurice Pickard:
Your remarks about data being fudged suggests that maybe somebody is or maybe people are gaining the system. When money is given in grants, it may not be tracked as accurately as it could be. Is that what your minister was suggesting?

Dr. Shelly Batra:
Yes. The minister was suggesting that health data was fudged because people are in the habit of concocting data and creating numbers

of patients they have treated. They might not have treated so many patients. They have to reach targets and maybe that is the reason. Now, people say that everything is computerized, so fudging cannot take place but you give me a computer, I will enter five million patients and tell you I've treated five million in one day, but a fingerprint cannot be fudged.

So what we are doing in Operation ASHA, we've got this eCompliance, the biometric system. Very simply, it's a ten inch _____ (08:36) top with a modem attached and fingerprint reader. All patients have to give their fingerprint before they start the treatment. These devices are kept at the DOTS centers and with the counselors. Every time a patient goes to get the medicine, he has to swipe his fingerprint. The screen turns green. There's minimal text and it can be used by people who've got just a high school diploma or are just able to read and write and there's color coding. So when the screen turns green, it's says so and so logged in. The patient gets the medicine from the provider and well, he goes home.

Now if the patient doesn't come and _____ (09:14) goes to the concerned counsel and program manager that the patient has not come and the counselor has to go next morning to the patient's house, repeat the education, bring the patient back to the system, give the dose, and take the fingerprint. Now that prevents fudging of data. The counselor could very well tell us, "Well, I've gone to the patient's house," but not actually done it. Then we would be responsible for creating MDR in the world.

Dr. Maurice Pickard:
I see. You brought up an interesting point. You mentioned that the people who live in the slums leave the slums for jobs. They may be, most likely, are menial jobs but they move into a better part of the community of say, New Delhi, where I know you're from. They are by that movement exposing a larger part of the community to tuberculosis and by extension, is it possible that the more well to do part of India is also being exposed to multiple drug resistance and with our global economy, are developed countries also at risk and is this not just a problem of slum dwellers and rag pickers but a much more global problem health-wise and is this something that we should even think of in terms of influenza or other plagues that have visited our planet?

Dr. Shelly Batra:
Well, tuberculosis can happen to everyone and anyone. TB anywhere is TB everywhere. It's a global phenomena and we are now in the middle of an epidemic, not just of tuberculosis but that of MDR-TB and the sooner we accept it, the better it would be. Now, see what happened, the developed world got rid of tuberculosis even before the advent of TB drugs. There was no TB left because of improvement in housing, sanitation, and improved nutrition.

Now tuberculosis has staged a comeback in the Western world. That is because of global travel. I would say easily more than half the patients in the US would be those who have either visited a high burden country or, well, because they've come in contact with a patient from a high burden country.

I went UK recently and you know what I said? I said London is the TB capital of Europe and they wouldn't believe me, the Brits. And they had a good laugh at me and then I proved that I was right and they were wrong. It's unfortunate but true. London has seen a record number of cases in the past year. Some parts of London are worse than Brazil or China. The Darklands area, the East London area, the disadvantaged places where they've got that very bad kind of housing, the damp riverside housing, and where people live in, well, clusters of poverty.

We cannot really turn a blind eye to MDR-TB. When a patient of TB is not treated, he can infect 10 to 15 patients per year in his lifetime. Imagine if a patient has got MDR-TB, he will infect the same number of people but the kind of bacteria he's transmitting in the universe is that of MDR-TB. And this is how we are in the middle of an epidemic of MDR-TB. Experts say there could be easily five million cases of MDR but these figures are just the tip of the iceberg because we don't have the capacity to diagnose MDR-TB. Now, tuberculosis could be a clinical diagnosis. A patient comes, he's got cough, he's got signs and symptoms. MDR-TB is a lab diagnosis. Where is the lab support? Where are the laboratories to do the culture and the sensitivity when we don't have laboratory infrastructure, we are missing out on so many patients of drug resistance.

Dr. Maurice Pickard:
You know, you mentioned London. Does London think about using your model to visit the same kind of areas that you're visiting in the slums of India?

Dr. Shelly Batra:
Yes. They invited me and I was invited to Cambridge. I met up with the National Health Authority physicians with the Health Protection Agency and they're now trying to see if we can develop some kind of partnership. I'm very, very hopeful we will be able to do some work with the Brits and of course I quipped, I said, "Well it's like carrying coals to Newcastle if I'm going to come there and help you with medical treatment," because there was a time when the British came to India and built our hospitals and our schools and now I'm being invited there, but I'm looking forward to it. If that happens, it'll be really wonderful.

Dr. Maurice Pickard:
And then they left very suddenly.

Dr. Shelly Batra:
Well you see, they're not doing DOTS which is very strange that UK is not doing DOTS. See, those who need direct observation in UK are not getting it and unless you do direct observation, you ensure every dose taken, you are creating MDR. They have the problem now.

Dr. Maurice Pickard:
You know, I know you've extended your program and your clinics to Cambodia. Why Cambodia?

Dr. Shelly Batra:
Several reasons for starting work in Cambodia. One of the reasons was that when we started work in India, I knew very well that one has to start work in other countries. You can't contain the disease. You can't just say we've cured people in India and we've done our bit. And there are 22 high burden countries. There was a young American lawyer who was on the board of Operation ASHA and he was working in the city of Phnom Penh, working pro bono, teaching law in the university, and he called me up and he said that the situation here is horrible. TB is rampant. There's a lot of poverty. More than 30 percent Cambodians live in abject poverty and there's malnutrition and tuberculosis. Come and do something.

So I sent a male to my board in Chicago and they were so supportive that one of the board members introduced us to the American ambassador in Cambodia and also the ambassador at large. And immediately the connections were made with the national TB program known as CENAT and with Dr. Eang, who's leading the program, who's by the way, a wonderful person. Very proactive and under his leadership, things have improved remarkably in Cambodia.

But when we started work in Cambodia, I know that there was a big problem over there. You see, if you remember Cambodia's history, it's a land devastated by politics. There were the Khmer Rouge, the communists, and you remember the movie The Killing Fields of Cambodia, the long march to the Laos border and a million people died and there were skeletons and skulls everywhere. And then what happened, I think after that, the Americans were responsible for some development there. This is why the American ambassador's word carried so much weight.

And we started work with the same model as in India, the same collaboration with the government, getting the free medicines, getting the free diagnosis there. And we started with the mobile DOTS model. Now that is a little different compared to the urban slums. In urban slums, these are densely packed areas so we can have a center established over there. In rural areas and also in Cambodia, patients are scattered so the counselor goes on a motorcycle to the patient's house everyday and gives the medicine. A direct observation in the patient's home. This is the model in Cambodia.

And I'm happy to say that right now, Operation ASHA is treating 10 percent of all patients in Cambodia. We are covering seven percent of the population. We are working in two provinces in four operational districts, which are like states in these two provinces And in this year, the detection rate in our area has gone up by 70 percent. Cambodia as a whole is one of the better countries. It is definitely one of the high burden countries but the government is so utterly focused on TB treatment. They are so proactive and they're so supportive to NGOs, unlike our own wonderful India government, that work is done beautifully in Cambodia and Dr. Eang, under his leadership, the prevalence has gone done from 690 per hundred thousand to about 400 per hundred thousand which is a great achievement indeed.

Dr. Maurice Pickard:
Give me an idea what your default rate is or what it was to begin with and what it is now. By default I mean people who are lost to follow up, people who don't come in and you have to pursue.

Dr. Shelly Batra:
Let me talk a little bit about default. Default is one of the biggest challenges in TB treatment, as I'm sure you and your listeners, you will all agree. Default in urban slums is amongst the highest as compared to any other area because these are the most challenging areas. These are people who have no family, no social structure, and they've come from far off areas and they could be a migratory population going from place to place. Think of construction workers who leave a site who go elsewhere in search for jobs. Default in urban slums, the government of India says seven percent. Experts say anything from 36 to 70 percent. Operation ASHA's default using the community empowerment program, was as low as three percent but now with biometric technology, our default has come down to 1.5 percent.

Dr. Maurice Pickard:
That's amazing. That's really excellent. If you could step back for a moment and from what we're talking about and kind of tell me what

you think the future is, not only for Operation ASHA, but for worldwide treatment of tuberculosis, what would you say and what is on your wish list?

Dr. Shelly Batra:
Well, I'll answer one question at a time.

Dr. Maurice Pickard:
Okay.

Dr. Shelly Batra:
First of all, I'll start by quoting the Stop TB Partnership that says, "that by 2015, they will be 1.3 million cases of MDR-TB in the world," multi-drug-resistant TB, "and they will require 16 billion dollars to treat." An amazing number and where are the billions of dollars coming from? Resources are limited. Work is unlimited. So ultimately, it is the most cost effective and high impact organization that should come forward and do more and more work.

And I feel my wish list is that best practices should be incorporated, should be promoted by NGOs all over the world. And governments, the WHO, the World Bank, they are the ones who should promote the best practices but unfortunately, things have not been like that. Now there is the Stop TB Partnership housed by the World Health Organization and they give the TB REACH funding. The TB REACH funding, I think, was 15 million dollars and that was given for case detection. That was given to NGOs who detected maybe 18 thousand people. That is all. The cost per detection was more that eight hundred dollars.

Now, had the money come to Operation ASHA, our cost per detection is 20 dollars. I would have detected 750 thousand patients. So we have to think in terms of numbers. We have to think where the money is going and unless we do that, money will continue to be flittered away and unless we open our eyes to the reality, we will all have blood on our hands. We are all equally responsible in this rising surge of cases of MDR and XDR-TB.

Dr. Maurice Pickard:
You mentioned the term best quality and how our country is beginning to pay differently for what is considered best quality and how our country is looking at readmissions to hospitals and I'm intrigued by the concept of community members visiting at home. So many of readmissions to American hospitals are because patients forget to take their drugs, forget to eat, may fall, become dehydrated, dress inappropriately for the weather, how you don't have to have a Ph.D. to deal with so many of these issues if you had a community person visiting at homes. So I'm intrigued by your concept of so much more can be done by somebody you trust who you let into your home. How would you respond to that ad?

Dr. Shelly Batra:
I think you've brought forward a very, very valuable idea and I think this should be adopted the worldwide over. Use physicians for their work only and use community health workers to do what they can do. Like what we are doing, we are using the physicians to provide the diagnosis of tuberculosis but the daily observation, the daily treatment, can be done by anyone who's been given a little training. And in the US, a lot of work can be done by semi-skilled, I shouldn't call them physicians, but by community health workers who can go door to door and give treatment for communicable diseases, for non-communicable disease, and chronic diseases.

And one very big concern is the elderly who live alone. They've got hypertension. They've got diabetes. They need medicines for, well, prevention of strokes and so many things. Why can't we not have trained people going to their houses? There is so much unemployment. What I said in London was this, "You tell me that a hundred thousand students are without jobs. Why don't you make them DOTS providers? The patients will be treated. They'll be given direct observation and the students will have food on the table. They'll get their pocket money."

You know, a travel card in London costs 10 pounds for a day's travel. That's a huge amount of money. Similarly in the US, I see there are homeless. When I was walking to the studio, a man stopped me and asked him to "give me a few dollars" so he could buy a sandwich. He didn't have money for a meal. Now, if we can mobilize the community, especially the disadvantaged communities, to treat their patients, to help physicians treat their patients, and do the home visits. Why not?

And we can use technology to support it. If we had a fingerprint system, imagine a community health worker going door to door, giving treatment for say diabetes or heart disease and taking the fingerprint. And if the fingerprint is not given, there is a red alert in the hospital and then the hospital machinery is mobilized. That will cut down costs remarkably.

Dr. Maurice Pickard:
I think you've given caregivers in the United States a lot to think about. You don't have to be in a developing country or an undeveloped country to share many, many problems with health and health treatment which doesn't have to only be confined to tuberculosis. I was

going to ask you this, because your population is often malnourished, live in close contact with each other, have you also been able to deal with HIV positive patients, which is also a disease in which people don't disclose that they're HIV positive?

Dr. Shelly Batra:
Yes. And HIV is fueling the TB epidemic in a big way. So what we are doing in Operation ASHA, we're encouraging every patient to get himself tested for HIV and that is done free of cost. Our counselors are facilitating the testing for HIV for all TB patients and those that test positive, their treatment by the National AIDS Control Program, again for free, is again promoted and facilitated by our community health workers.

Dr. Maurice Pickard:
You know, one of the things I've neglected to ask you, when we first met, I believe you had three or four clinics and I don't remember how many patients you had, maybe a thousand patients. Can you give me an idea, in the years that you and I have been friends, 2006 till now, how many clinics you now have and how many patients you're now taking care of?

Dr. Shelly Batra:
When we started work, we started well with one center in 2006 and right now, we have got about 196 centers in India and 48 centers in Cambodia. We have treated 25 thousand patients in India so far. This year, we will complete ten thousand patients by the end of the year. In Cambodia, we have treated 314 patients and the numbers are going up day by day. We have already signed an agreement with the government of Vietnam, an overarching agreement, to start TB treatment in Vietnam.

Dr. Maurice Pickard:
You know, we've had a lot to think about and a lot to talk about and I really want to thank you for being our guest again. I hope you will come back again and we'll have even more encouraging news and more things for us to think about. So I'd like to thank Dr. Shelly Batra, the president of Operation ASHA for speaking with us today.

I'm Dr. Maurice Pickard and you've been listening to the Clinician's Roundtable for ReachMD XM Radio, the channel for medical professionals. ReachMD, online, on demand, and on air. Please visit us at ReachMD.com. Thank you for listening.