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**38<sup>th</sup> Union World Conference on Lung Health  
Newsmaker Interviews: Paul Nunn, M.D., Coordinator of  
TB/HIV and Drug Resistance at the World Health  
Organization's Stop TB Department  
November 9, 2007**

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**JILL BRADEN BALDERAS:** Paul Nunn, Coordinator for TB HIV and Drug Resistance to the Stop TB Department at WHO. Thanks for joining us today.

Last year at this conference in Paris, we knew that there were about 17 countries with extensively drug resistant tuberculosis. Can you give us an update on surveillance data? How many countries now have it?

**PAUL NUNN, M.D.:** The data that we have at this point in time is that 41 countries have reported cases of extensively drug resistant TB or XDR TB. But those are isolated cases. And they don't represent the results of systematic surveillance for XDR-TB so it's only the tip of the iceberg.

**JILL BRADEN BALDERAS:** So is it possible that there is XDR-TB in countries that do not have the lab capacity to actually diagnosis it?

**PAUL NUNN, M.D.:** Well it's more than possible. I think it's almost a certainty. We don't know really where XDR is getting to be found precisely. But we can be pretty sure that where we have high concentrations of multidrug resistance, resistance to the first line drugs, that's where you would expect to find XDR-TB. So we would expect to find it particularly in the form of subgenual countries including the Russian Federation, in parts of China, in parts of India

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as well as South Africa. We really don't know about the extent of MDR TB and XDR-TB in the rest of sub-Saharan Africa or a part from South Africa and that's because we just don't have enough countries able to mount a drug resistance surveillance exercise.

Now for the most part that's because their laboratory capacity is so limited. So yes, there could be cases of MDR and XDR-TB in those countries that we don't know about but I don't think there will be very many cases.

**JILL BRADEN BALDERAS:** And in the, in terms of those countries that do not have the laboratory capability what would it take and how long would it take to actually get those countries on line?

**PAUL NUNN, M.D.:** Well right now using existing technologies to set up from scratch a functioning TB laboratory capable of carrying out culture and drug susceptibility testing is actually a complicated operation. And it's quite expensive. I mean we calculate that the laboratory capability of doing culture would cost about \$250,000 US to establish quite apart from the staffing time and salaries and so on. And a bit more almost half as much again if you are adding drug susceptibility testing capability to that.

So it's a major exercise. However the fact of the matter is that many countries do not have sufficient

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capacity. Some countries in sub-Saharan Africa don't even have a single laboratory capable of carrying out drug susceptibility testing. So there is clearly an enormous amount of work to be done. A: to be build new laboratories and B: to extend the capacity of those that currently exist.

**JILL BRADEN BALDERAS:** Last year there was an incidence here in South Africa in Tougala [misspelled?] area where there was an outbreak of extensively drug resistant TB among HIV positive patients. And virtually all of them died within two weeks. Has something like that happened again within the past year and are you concerned that something else might like, if it hasn't, happen again in the future.

**PAUL NUNN, M.D.:** Well, one actually was reported from Tougala Ferry [misspelled?] was clearly a snapshot as it were taken in time during the course of an epidemic of multi and extensively drug resistant disease in that hospital. What we now know is that since I think the beginning of 2006 in Tougala Ferry, in the Church of Scotland Hospital in Tougala Ferry there have been something like 400 cases of MDR and XDR-TB. Interestingly the majority is XDR-TB rather than MDR TB. Now that's in that single hospital. So the question that always arises are there other hospitals in South Africa and elsewhere which could be seeing the same kind of thing. Now we in the World Health Organization, we have been working with the provincial Department of Health in Qwazia

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[misspelled?] Natal the providence where Tougala Ferry is. And we have been looking at the culture results coming each of the districts. And what we can say from our preliminary findings at this point in time is that it does look as though the district in which the Church of Scotland Hospital is found is unique. They have an usually high number of cases and percentage of cases that is XDR-TB. So although XDR-TB cases have been found elsewhere, it does look right now as far Tougala Ferry outbreak is certainly the worse of its kind.

That said, the conditions for creating similar epidemics or outbreaks elsewhere probably exist so far as we know. So the next phase of the work that we are doing with Qwazia Natal is trying to really work out why it happened as it did in the Church of Scotland Hospital. And hopefully that will indicate to us what steps need to be taken both there and elsewhere.

I mean I should add that already of course in the Church of Scotland Hospital they have instituted serious infection control measures both administratively and environmental with negative pressure rooms, isolation facilities and so on. So steps have already been taken to limit the epidemic and they seem to be working.

**JILL BRADEN BALDERAS:** Now while these multidrug resistance and extensively drug resistant cases of TB are the

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ones that typically make into the news, the truth is that the vast majority of TB cases are treatable but it seems as if the multidrug resistant is growing at least, so would you agree with that assessment that it is growing and that we are at risk of possibly it growing even further or do you feel like it's somewhat it's somewhat contained?

**PAUL NUNN, M.D.:** Well first of all of course your statement that the vast majority of cases of TB are treatable is absolutely correct but I would also add that the majority of cases of MDR TB are also treatable as long as you diagnosis them in time. And in some cases they are extensively drug resistant TB are even treatable. It's when you begin to run out of drugs where patients are sensitive only to one or two or zero of the existing drugs. That's when it really does become untreatable. And that's a tiny, tiny, tiny percentage of the total number of TB cases.

**JILL BRADEN BALDERAS:** How close are we to finding new drugs?

**PAUL NUNN, M.D.:** Not that close, unfortunately. I mean the pipeline for production of new drugs has 20 odd compounds in it I understand from meetings at this conference. And that is 20 more than were in the pipeline ten years ago. It's entirely the result of recent efforts to build up research and development funded by the Bill and Melinda Gates Foundation, through the Global Alliance for TB

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drug develop in New York and their partners.

Now but the trouble is that the two drugs that are most far advanced in this pipeline belong to the family fluoroquinolones and those are drugs that have already been lost in the cases of XDR-TB because XDR-TB is defined as resistance to fluoroquinolones amongst other drugs. So the first two in the pipeline aren't going to help us a great deal as far as XDR-TB is concerned.

We are then going to have to wait possibly another four or five years before all the safety and efficacy trials are done on compounds that are coming behind. So what that means if you sum it all up is that I don't think there is much chance of us seeing a new effective compound hitting the clinics so to speak within five years.

**JILL BRADEN BALDERAS:** Switching gears a little bit to TB and HIV there was a report released last week from the Foreign Collaborative HIV Research indicating that about one third of the 40 million of HIV positive people are co-infected with TB. And they said that the co-epidemic has largely gone unnoticed. Now would you agree with that assessment that the co-epidemic has largely gone unnoticed?

**PAUL NUNN, M.D.:** Well it certainly hasn't gone unnoticed by us in the TB community or in the World Health Organization. I think the overlap of the TB and HIV epidemics has been well known now for well since the early

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1980s but I think that it certainly hasn't been properly addressed except that it is an issue improperly addressed by policy makers in many countries. So from that point of view I think this recent report has served a purpose in trying to bring people's attention to the issue.

In addition the same the report and you may be wanting to move onto this, mentions that, talks about the problems associated with BCG which is also caused some significant concern.

**JILL BRADEN BALDERAS:** ABCG is the vaccine that is given to infants?

**PAUL NUNN, M.D.:** Absolutely right. It's the NTV vaccine that has been around for nearly a hundred years but does seem to be, to be effective in certain rather restrictive cases of tuberculosis. And for some years there has been concern about this particular vaccine because it's a live vaccine and associated with HIV infection. And WHO with it's panel of experts has been saying that we should be giving BCG to infants who show symptoms or signs of HIV infection. And that's been the case for about 15 years now. But recently they have made the restrictions if you like more serious and said that BCG vaccination shouldn't be given to any child who is known or strongly suspected to have the HIV infection whether or not they have symptoms.

And that issue is obviously causing policy makers

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some concern because now it means that you have to try and distinguish those neonatal, very young children those who are HIV infected from those who aren't HIV infected and that is not easy to do.

**JILL BRADEN BALDERAS:** Then just in terms of care on the ground and the point of care where people go especially in developing countries to get, whether it's treatment for HIV or treatment for TB, do you believe that there is better opportunities there for coordination?

**PAUL NUNN, M.D.:** Definitely, I mean we have had for some three and a half years now a clear policy on what countries should do to address TB and HIV together a 12 point policy package. And through multipoint evaluation system with information coming through from under 90 something countries each year we know that countries are doing much more to implement TB HIV collaborative activities. We know that across the world in 2006 11-percent of all TB patients across the world were tested for HIV compared to seven percent in the previous year. So there are significant increases so we know that some countries like Rwanda, Malawi, Kenya, for example are testing around about three quarters of all TB patients across the country for HIV. So things are certainly happening. Now the question is whether you are saving lives in the process and reducing morbidity. Of those that are tested in countries like the three I just mentioned,

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the significant proportion are receiving co-amoxiltrol to prevent the other associated infections of HIV.

And in Kenya I think that figure is over 80-percent of those who turn out to be HIV positive with TB are getting co-amoxiltrol. So that is definitely how we are going to in effect quite in proportion 30 odd percent of those found to be HIV positive are also getting antiretrovirals.

So yes things are definitely moving but if you look at the figures overall is nowhere near enough. So you know doing okay but could do vastly better and if we want to save the lives of all the people who are infected then we really have to do much better.

**JILL BRADEN BALDERAS:** Yesterday at the Stop TB Symposium Marcos Espaniello [misspelled?] who has the Stop TB partnership said that he would like for the TB community to "take over at AIDS 2008" which as you know is the every other year a huge AIDS conference. So could you just comment on that, how well you think that the TB community and the HIV community, the scientific communities are working together and if that could be improved upon?

**PAUL NUNN, M.D.:** Yes. Clearly he was speaking figuratively. I think take over is far to, well it's not precisely a diplomatic way of expressing it especially since there is and has been over the last couple of years considerable increase collaboration between the TB and the

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HIV communities. Even in the last big AIDS conference in Toronto there was enormous attention being paid to tuberculosis and the TB HIV overlap issue.

Now I think in Mexico I would expect to see the interest even more widely expressed. I think there will be more sessions on TB. I think there will be more discussion on tuberculosis. I think there will be more TB events and material in the if you like the non-academic components of the conference. Because we and others are working quite closely with the international AIDS Society to make sure that happens. And indeed if, organizations like UNAIDS for example their next program coordinating board early next year is going to be addressing TB as one of their major priority issues. They in that, in the sort of governing body if you like of the response to HIV/AIDS. They see the overlap with TB as being a crucial issue that they need to address in order to ensure that people with HIV who are or at risk of developing tuberculosis get the care and attention that they need. So things are really moving and I'm sure it will be expressed in Mexico.

**JILL BRADEN BALDERAS:** Dr. Paul Nunn, Coordinator for TB, HIV, and Drug Resistance at WHO Stop TB Department. Thanks for joining us today.

**PAUL NUNN, M.D.:** Thank you very much. It's been a pleasure.

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