

**37th Union World Conference on Lung Health:
TB Curricula in Nursing, Medical and Allied Health Schools:
Educating for TB Control
November 3, 2006**

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RAJITA BHAVARAJU: Good afternoon. I think we'd like to go ahead and get started. My name is Rajita Bhavaraju. I'm from the New Jersey Medical School Global Tuberculosis Institute in the United States. I'd like to have to my colleague, my co-chair, introduce himself as well.

ZEKI KILICASLAN: Thank you. I am Professor Dr. Zeki Kilicaslan from Istanbul Medical Faculty, Turkey.

RAJITA BHAVARAJU: I'd like to welcome you to this symposium today. This topic is very, very relevant given the theme of our conference, human resource development. It's a topic that's been of great interest for many years to individuals in TB control, given the fact that we are seeing a mixture of different types of topics, in the ways in which tuberculosis is introduced at the pre-service professional level, and that is at the student level. What we're fortunately going to be presenting today is models from various programs, both from low-, middle- and high-incidence countries, as well as we have models in medical school, nursing school, as well as in the allied professional schools. So, we're fortunate that we're able to present things from various perspectives.

What we will do is each of our presenters will present for about 20 minutes. If we have some time after each

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presentation, we will take one or two questions and then we will have some time at the end to have a 15-minute discussion at the very end of the presentation for all of our speakers.

This presentation is being recorded and it will be webcast today, so I ask that at the end during your discussion and when you have questions, if you please go up to the microphones that are on either side of the room to ask your questions.

So, without further ado, I'd like to start with our first presenter. This is Dr. Marguerite Jackson. Dr. Jackson is the director of the Administrative Unit for the National Tuberculosis Curriculum Consortium. She's also assistant clinical professor of family medicine at the University of California at San Diego. Dr. Jackson will be speaking today on the development and implementation of the TB Curriculum Coordinating Centre.

MARGUERITE JACKSON: Thank you very much. I'm very grateful to the organizing committee and our coordinators for inviting me to present. I am presenting this in conjunction with my colleague, Dr. Antonino Cantanzaro, who is in the audience today.

This is a program that involves eight different health care disciplines. We are funded by the National Heart, Lung and Blood Institute of the National Institutes of Health in the

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United States. Our charge is to improve knowledge of tuberculosis among students in health profession schools in the United States. Now, our mission is a domestic mission for the United States, but as you will see as I go through presentation, many of the materials that we have developed and will be developing over the next two years are quite applicable to the international educational setting. We are very happy for anyone who is in the audience, wherever you are from, to use our materials. They are available through the internet and I'll share with you how to find them shortly. We were funded for five years and we have just completed the third year of those five years.

The first thing that we did to set up this program was to develop infrastructure, much of which was included in our proposal to the NIH and much of it was provided to us in a skeleton form by the NIH as a way to structure a program of this nature. Our core group in San Diego at the University of California includes Dr. Catanzaro; Dr. Shawn Harrity, who is an infectious diseases person with expertise in education; Dr. Helene Hoffman, who is an expert in Internet and expert in information technology with the School of Medicine; and myself.

We have divided our country into five regions. Most of which, but not all of which, are high-incidence states. We have a number of partner schools and persons in each of these

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areas.

We looked for members of our consortium to come from three different groups. One is content experts who are very knowledgeable about tuberculosis. In fact, several of our consortium members are with us at this conference. We also wanted to get educators who had very sound backgrounds in education and who were recognized for thinking out of the box, because much of what we are hoping to do is to use active learning strategies and technologically interesting methods of reaching students because that is certainly consistent with what current learners enjoy. Then, of course, we needed some people who were recognized for their administrative skills in academia as program directors. I certainly don't expect you to read all the details of this, but this does reflect all of our partner organizations and schools throughout the United States. At the end of the session, Dr. Catanzaro will be distributing a little brochure that we have developed, which has this list in it as well.

We felt it was important to include all of the disciplines that have some relationship to caring for or working with tuberculosis patients, people and specimens as well. So our discipline groups are divided into the list that you see on the screen. We have two subgroups within nursing. We are addressing students who are in baccalaureate nursing

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programs, as well as students who are in advance practice programs for nurse practitioners primarily. We elected not to focus on the two-year or associate degree nursing programs, partly because in those programs there's much less emphasis on community health and infectious diseases and we felt we were better served by going with the baccalaureate level as a starting point. You can see many other disciplines are included as well.

We also created three committees. One, an advisory committee, which is outside consultants, who are not members of our consortium to give us advice and counsel over time. A steering committee, which is the five regional directors as well as the core group. Then, of course, since what are in the business of doing is creating educational products and educational resources, we needed a committee who would be responsible for oversight of those products. That is what we call our publications committee. We collaborate a great deal with one another and so far we have done so in a variety of different ways. Our annual meetings have been particularly productive and we'll have two additional meetings as we move forward with our contract. We have also gotten our discipline groups together several times to develop their own cohesiveness and their own discipline specific agendas. Now we are working very closely with partner organizations because, of course,

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what we're interested in is dissemination of our information throughout the educational system, within the United States.

We are very proud of our Web site. Our Web site is very central to all of our communication, both internally and externally. It is available at no charge to anyone who wishes to access it and to access our materials and the web address is there. You'll see that again as we move forward. This is what our home page looks for our National Tuberculosis Curriculum Consortium Web site. It is quite interactive. There are many component parts, as well as a listing of it is frequently updated of publicly available resources.

Some of the things that we have accomplished to date are to develop competencies about what students in all eight of our disciplines should know about tuberculosis by the time they have completed their education. It's what we have used as a cornerstone for our educational product development. I'm very pleased to do say that a manuscript about the process and also with the physician-specific competencies will be published in the *International Journal of the Union* within the next few months. More details will be forthcoming there.

We have conducted a baseline survey of students in all of our programs. We completed that in 2005 with 1,480 students. I'll be sharing a bit of that information with you and we have surveyed additional students in 2006 to beef up our

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baseline, so to speak, in some of the smaller disciplines. Manuscripts are in progress reporting those results as well. One of the things that we were interested in in this survey was to determine whether the students in our consortium schools had had any or how much information about TB presented to them. As you can see here, in response to the question during your academic program have you attended at least one lecture where TB was the primary focus? Eighty-eight-percent of those 1,480 students said yes, that they had. You can see that it's not equally distributed across our various discipline groups with our students and pharmacy in this particular analysis reporting the highest proportion of education about TB followed closely by physicians and clinical lab sciences students. The MPH students being the students that reported the least frequent information about TB, probably because there's so much diversity within MPH programs and specialization.

Another question was, about how many hours of lecture or instruction did this entail? The average was somewhere between one and four hours. That did vary by discipline.

We were particularly interested in knowing what kind of teaching modalities the students had exposure to during that material presentation. As we expected, almost everyone had had lectures and about half had had some kind of case conference or case discussion, but you can see that those kinds of learning

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situations where there is more opportunity for interaction were used by a very small proportion of the students. So, we felt that our goal of using active learning methodologies and interactive strategies there was certainly plenty of opportunity for us to focus in those areas and that's what we're doing.

We also were interested in what the basic level of knowledge was about TB and this baseline. One of the questions we asked was, TB organisms are most commonly transmitted person-to-person by what route? About 91-percent of the respondents knew that that was aerosol transmission and we were quite pleased about that. Again, it did vary by discipline.

We were a little bit surprised by this, however, because when we asked what is the current recommended method for administering tuberculin, only 65-percent knew that was by intra-dermal injection. Now we were interested in knowing whether that varied by discipline group. Of course it did. The smallest portion knowing it was intra-dermal were the pharmacy students. Pharmacy students in the U.S. don't give injections or administer PPDs. The highest proportion was among nurse practitioner students, who have been practicing nurses for some time prior to going on to graduate school.

Our next set of accomplishments entails development of products. To do this, we have established a product

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development team. We've had that team up and running for a little over a year. It is led by the UCSD core group, with a variety of different members of the consortium participating in different ways. So, the purpose of the product development team is to work together to develop and produce multimedia products to enhance teaching and learning by health profession students. To do this, we developed a blueprint or a design for product development that looks something like this. You can see that we have several component parts to our blueprint and this is what we're using as a way to organize our work and to make sure that we are meeting the various educational needs.

I'll describe each of those components. We have developed some standardized templates for our computerized cases and are doing the same for our standardized patient cases. Standardized patients are very commonly used in schools of medicine, somewhat less commonly used in other schools. Computerized cases can be used by all of the disciplines and, again, that's an opportunity for interaction based learning by the student.

So, what do we have in our educational product bank? Well, we have questions, answers and teaching points, about a hundred of these so far. We have rated each of these questions by difficulty level, applicability to each discipline and have linked it to the discipline competency. So, when you go into

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the Web site, if you're interested in questions for exams, interested in questions to use in teaching about TB, we have those available for you, fully [inaudible] and reviewed by our publications committee to make sure that they are accurate from a content standpoint and also consistent with good educational methodology for question writing. These all happen to be multiple choice questions at this time.

Clinical case descriptions are like a computerized medical record for a patient. These are based on real patients with information changed to protect confidentiality, of course. These computerized clinical case descriptions have lots and lots of information about lab values, public health follow up, clinical presentation, diagnostic issues, radiology and so forth. So, when we move forward over the next couple of years we hope to have 10 to 15 of these fully developed clinical case descriptions. We have about half a dozen completed and up on the web site now.

We've also completed a variety of different exercises with more to come, so that at the end of the next couple of years, we should have two to three learning exercises at a minimum for each of the disciplines so that you can pick and choose how you might want to use them for teaching. These computerized cases will include standardized patients, some games like "Jeopardy" and "Millionaire" as well as some other

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methods.

We have an image library that is growing daily that can be used to augment materials that are developed either through the NTCC and used from our web site or can be incorporated into learning materials that faculty develop themselves and these contents will develop over time in categories from the blueprint.

We also have a series of member developed products. These are primarily PowerPoint lectures. This is not what we have emphasized, because of course there are outstanding PowerPoint lectures available on many Web sites that are familiar to all of you, but we do have faculty who wanted to share some of their better PowerPoint lectures, perhaps with a little bit different twist, and so those are also available.

Now, the people to whom we are directing our energies are primarily faculty, teaching students in U.S. schools. In looking at how many schools there are, it turns out that across our eight disciplines there are over 3,000 accredited schools and programs. That's a rather large number. We also looked at how many students have the potential to be reached by this information and each year there are thousands and thousands of graduates. For example, in schools of nursing at the baccalaureate level, over 15,000. Over 15,000 physicians in the various types of schools and over 8,000 pharmacists, just

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to mention a few.

A secondary target audience for our products is practicing health professionals. In the United States there are over 4 million of those. So, as you can see, we are trying to reach a very large audience and feel that by having a very active and comprehensive web site that that is one way to provide information, both to faculty and lifelong learners.

We're also working with a variety of partner organizations who accredit schools, because we would like to have more TB integrated into curricula for our students, who work and organizations that are responsible for licensure for entry into practice, as well as certification for some of our entry into practice as well as specialties. Pharmacy, for example, there are several organizations that we're working with in the discipline of pharmacy and you can see that acronyms are everywhere. It gets very confusing what all these letters stand for. But, for example, in pharmacy the accreditation process is managed by the Accreditation Counsel for Pharmacy Education, licensure by the NABP, the licensure exam is the NAPLEX, which is the like in the INCLEX for nursing, and certainly there's also certification for pharmaceutical specialties.

We are presenting our information at a variety of professional meetings, such as this one. We have developed

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many different abstracts, posters and brochures and are starting to publish in professional journals. So, this is an example of a poster. Obviously, I don't expect you to read it, but you can see that these are the kinds of things that we're doing and we've made a number of these this year. This is an example of our general brochure that Dr. Catanzaro will distribute to any of who would like to have it. So, please visit our Web site. You're welcome to anything that's there and I'll be happy to entertain any questions now or later.

Thank you very much.

[Applause]

RAJITA BHAVARAJU: We have time for one or two questions for Marguerite. I remind you to please go to the microphones if you have any questions.

FEMALE: Marguerite, I actually have a question for you.

MARGUERITE JACKSON: Yeah.

FEMALE: I understand in speaking with you that you were not originally a person from a TB background and perhaps many of your faculty weren't as well. What approach did you use when you had to approach individuals to convince them the importance of including TB in the curriculum?

MARGUERITE JACKSON: Well, I have to give the credit to Dr. Catanzaro for that. He is one of the world's best

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salespeople. He is actually the one who recruited our consortium members. If you'd like to address that Tony, I would appreciate it.

ANTONIO CATANZARO: It's an ongoing battle because it's a matter of real estate. There's only a certain amount of time that the teachers have to present information and all information is increasing in every field. So, it's a big problem and it's the main reason, as Marguerite pointed out at the beginning, that we had three areas, and one of them being program directors. So, 10 of the people in our consortium are like directors of primary care, directors of education for nurse practitioner, et cetera. So, at least in those schools, we've got to keep people who once they decide it's going to happen, it's going to happen. But, more importantly, they belong to professional societies of other program directors of primary care, other program directors of nurse practitioner programs, and they'll say to the other ones, you know, we've got this really cool thing going. Take a look at it. Why don't you do it in your center? It's working out really well for us. So, it's a constant battle, a very difficult problem.

RAJITA BHAVARAJU: One more question.

MALE SPEAKER: My name is [inaudible]. I'm a professor of respiratory medicine from [inaudible]. I did a survey of over 400 interns in Pakistan and found major deficiencies in

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their knowledge. The question I have is, is your curriculum applicable to those medical schools where there is a problem with learning?

MARGUERITE JACKSON: Yes, actually our curriculum unit director, Dr. Harrity, is an expert in problem-based learning. That is the basis for many of our educational materials.

RAJITA BHAVARAJU: Thank you, Marguerite.

MARGUERITE JACKSON: Thank you very much.

RAJITA BHAVARAJU: Our next speaker is Dr. Zeki Kilicaslan, who is the co-chair of this session. He's medical faculty of the University of Istanbul and is also with the TB Association in Turkey.

ZEKI KILICASLAN: Chairman, ladies and gentlemen, I will try to about speak TB [inaudible] and TB education in Turkey. Turkey is a median income country. Population is 72.8 million. Gross national product per capita around 5,000. Turkey is among the countries with median TB incidents. When we compare Turkey with WHO [inaudible] to case similar to [inaudible] Europe countries. The highest incidence is in Istanbul, which is the biggest [inaudible] of Turkey. In 2005, TB incidents is 25.7.

There is a decrease in incidence between years[inaudible]. It decreased [inaudible] some patients not demonstrating TB [inaudible]. Studies done in ministries of

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Turkey show that an important portion of TB cases are not registered in TB dispensary. For example, some area [inaudible] TB cases increase up to 60-percent. Therefore, it must be true that TB incidences are higher than this official number.

All told, there is no nation [inaudible] better about HIV/TB co-infection that appraised on different hospitals reports show that HIV/TB co-infection is very low in Turkey.

This is structure of TB control program. TB control activities are performed mainly by 250 dispensaries. Also, we have 21 regional TB lab and also 22 chest hospitals. There are a lot of TB associations that support this national TB control program.

Our NTP budget is around \$50 million USD, but 6-percent of this budget is spent on human resource.

This is main feature of national program. There is a new TB handbook prepared according to WHO TB guidelines. Generally explained bacteriologic examination is conducted in TB dispensary. We use short-course standardized chemotherapy. Treatment is free of charge. Also second-line drugs is free since 2001. We use generally ambulatory treatment with monthly dispensary control. BCG immunization is mandatory. We use investigation of close contacts, especially household contacts. We use prophylactic therapy in contacts under 15 years old.

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Next, we look at the medical education in Turkey. The number of medical schools is increasing gradually. Over approximately 5,000 medical students are registered every year in medical schools since the 1980s.

In majority of medical schools integrated education studies are used, but in the last years, problem-based and [inaudible] used in a few schools.

Generally, in medical schools classical theoretical examination methods are applied. New Objective Structured Clinical Examination used in a few medical schools.

[Inaudible] education in TB spread over several years. My main part is covered by microbiology, pathology, and chest medicine. Generally, public education does not include TB. It is [inaudible] lecture about TB. Practical education in tuberculin dispensary only used in a few faculties. There is not any special course. TB education is now structural relation between TB education and TB program. There is no structural relation.

We can't study Istanbul medical faculty. We compare examining question about TB with determinant objective, educational objective determined by WHO for tuberculosis education. We found only nine of 23 objectives include this question. Also, we found 77.8 version of question are about clinical radiological findings and drug information, only

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clinical issue. In this study interpreted 40-percent positive smears as false negative. And also 25.9-percent of negative smears as false positive. After that we [inaudible] continued the study last year. In this study 10 medical schools, which contained 37 of medical students in Turkey, there are 206 questions we surveyed. Only 27.7-percent of questions about priorities of NTP. Other questions is general clinical, radiology, pathology, immunology and other clinical issue.

If we look at the TB education in Turkey, generally it seems that clinical immunology aspect of TB are considerate in part of [inaudible] of NTP. Furthermore, we can draw [inaudible] education correctors and studies done in the fields. Similar study showed delays in diagnosis and treatment due to doctors are great. And also, a study revealed that only 30 percent of doctors now treatment standard regimen proper by NTP.

If we look at the field, there has been some improvement last year, but the rate of bacteriology examination in pulmonary TB is low. And also, positive smear rate is low. In officially treatment success rates seem around 80-percent in new case, but if we look at smear-positive case, we show cure rate is very low and default is high. Also, treatment outcomes is not good in others case.

There is no study representing Turkey, but studies done

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in different cities in Turkey show that primary MDR rate is around 3- to 5-percent and secondary MDR rate is 15- to 20-percent.

In new [inaudible] of WHO is it emphasized that a plank on the DOTS so it does not show all problems. And in time medical service must be improved. This shows clearly the importance of medical education. If doctors are not adequate application of DOTS literature is not possible. Tuberculosis is a problem of public health and has priority so medical faculties have to take responsibility.

According to WHO's suggestion in Turkey, pilot studies have been studied in Turkey in 2003, but expansion of those could not be issued. However, DOT has been started in many region of Turkey, with the help of local efforts.

In 2006, Turkish NTP has been reviewed by WHO European region. This evaluation is still continuing. Now, we think it is time to take serious steps for expansion of DOTS. At this moment, TB education must be devised in the direction of NTP with the cooperation of eleven national specialty organizations. In the respect, we need a National TB Curriculum Consortium like USA.

Conclusion. In Turkey, TB education curricula is currently based on TB as a disease, rather than TB control. As we are recently implementing DOTS as a national strategy, TB

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education should be revised considering the priorities of TB control.

Thank you very much for your attention.

[Applause]

RAJITA BHAVARAJU: We have time for one or two questions for Dr. Kilicaslan.

No questions. So maybe at the end, we can have you sit in the panel. Thank you.

Our next speaker is Dr. Sirinapha Jittimane. She is a public health officer in the National TB Program in Thailand. She's also the Chair of Scientific Section of the Union, the Nursing and Allied Professional Section. Sirinapha will be talking about team-building for TB education in nursing schools in Thailand.

SIRINAPHA JITTIMANNE: Thank you, Rajita. Good afternoon. The topic of my presentation is about team-building for TB education in nursing schools in Thailand. I believe that we try to have our students to have skill and knowledge to be able to provide care for TB patients, but from experience from different countries, you can learn from our experience that we have different methods to achieve that goal.

Today I share my experience about this project, which is very young when compared to maybe the U.S. and in Turkey. Because the HRD in Thailand just start two years ago and this

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one includes in this HRD plan. I will explain a little bit about why we need this project in our country. Absolutely, we need to understand now what happened before we started the project. We have [inaudible] activities for [inaudible] members who are the key persons to train nursing students, which they are outside ministry of public health, which are the NTP. Another important issue, which I want to share about a team building, because National TB program cannot work alone without collaboration from the nursing schools. And the last one about the [inaudible] which are the project learned and sometimes we make a mistake and we want you to keep in mind that if you like to deal with nursing schools what issue you would face like us.

As the theme this year about the human resource development and we recognize that we tried so hard, but if our staff don't have skill and don't have the knowledge our goal to cure 85-percent of TB patients couldn't be reached then. There are already other health professions and we believe that each profession should have different strategy for the training. This morning, Karen emphasized that there are no shortcuts. If you want to have better TB control you need to invest for the human resource in your own country. [Inaudible] really abstract and first when in our country sometimes we don't understand what [inaudible] means. Sometimes some people think

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that, okay, [inaudible] means just training, but actually it's not, right? It's about training including the collaborative network when you train them, you need to follow how many are [inaudible] are active and why they keep doing what you train them and why some couldn't do that. You need to really define after the training what they need and you need to motivate them, not just the financial incentive, but the social recognition. If they are an expert in that area, you accept them and try to promote them.

The last one, about environmental arrangement, you want them to work and what else you need to support them. In Thailand, there are many professions and for the nurses is one of the goals is our country, because Thailand is the lower middle income country and most of the time nurses are the group who are with the patients all the time. I think that maybe it's the same as other countries. Our nurses had more specific roles and this includes a petitioner, which mean that they provide care for the patients and they also work as educator because they teach patient, they teach the family members, the communities, to help them to work with TB. Several things happen and they need to coordinate things to ensure that patients can have the high quality of care. Sometimes they need to be the researchers to [inaudible] their providers in care and how many of the patients can be healed. In Thailand

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and [inaudible] they don't have doctors, so they need to be administrator and sometimes they just have only one nurse and what they need to do if they just have a little of money for each year and they have tons of TB patients. It is recognized that many skills of nurses should be impressed before they graduate from nursing skills. These include the nursing care, the need to provide a nursing care for the patients, they don't rest until they graduate. We train them after that. Then when we started HRD plan, we really don't know what's going on in nursing schools so we need to understand and then we start this project.

The presentation today, I will share my experience about the baseline assessment of TB education in nursing schools in Thailand. Maybe the findings are similar to the U.S. about what the students and the best kind about a model of which we try to build, the relationship with the nursing schools, which are our targets. In this project, as I mentioned to you, is very young, just one year. We did a TB education survey in June and July of 2005 and this I think is similar to the U.S. that we need a formal committee to measure that we have a person there. The committee from the National TB Program and from the nursing schools. We have the family members to attend now our training program and then we follow them up after the training.

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In Thailand we have about a 64 million population. We have the total of 80 nursing schools in Thailand, which are less than about 1,500 nursing schools. But each year, nursing students graduate about 7,000, but in the U.S. about 15,000, right? So, it's work to do anyway. And 82-percent of nursing schools in Thailand are government-sponsored.

Hold on. I forgot to tell you, sorry. We did a survey by a mail-in survey and we asked instructors or the teachers, rather than the students. We are so lucky because they are returned the mail the survey, so we don't have any missing score here. We want to know that the teachers have attended any TB training before. Only 5-percent attend training program from maybe the provincial or regional level. We want to know that how many percent of family members perform TB research. Because if they perform TB research which mean that area of interest would focus on the area. Since only five percent perform and this is not include the [inaudible], they just say yes. Ninety-five-percent are female. Absolutely, we want to know what contends they teach the nursing students. It is varied from school to school and I couldn't count a person test and present her for you because they answer more than one topic, so this is just number of the answer. Most of the [inaudible] teach about a treatment and the size and symptoms. Maybe this is similar to the Turkey. They focus a lot on the

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disease rather than the TB control. I'll tell you later why they do this. For the disease transmission, eight, and for the TB policies, just only two schools teach about this.

Then when we made [inaudible] we ask they don't know about a [inaudible] TB program. If they know it they would teach their students. I was not surprised about the length of teaching TB in the classrooms because I was a nursing student before. I have the lectures when I was a student. The demand from my previous schools they use the same lectures from 15 years ago. It varied like from five minutes, this is throughout four years of education in nursing school. They teach five minutes of TB and the maximum amount of five hours and a median about one hour, throughout four years. The length of practicing TB at health services a minimum 15. I don't know how they practice 15 minutes in a TB unit. A maximum of about 400 minutes. I don't know how to calculate that. I'm very excited right now.

Then after the survey we found that my boss is here we need to do something. We had a good response on the nursing school. The first thing, all school returned the mail. Which meant they sent some signal that they want to improve the TB content in the students. As we were so lucky because at that time, we had a grant from the Global Fund to organize training problem. So, we use the models for the training of TB clinic.

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As my colleague was saying this morning about HRD issues, right now WHO developed a manual to teach medical students, but we don't have the manual or guideline to teach nursing students so we use the TB clinic manual to teach, to train family members. We use not the lecture, but we use the small group discussion to break communication with them. After the training, we plan together what they want to happen. Because we don't want to tell them that you do this, you do this, because it's not going to happen. So this, then, what they like to happen this year and next year.

This is the opening ceremony of the training program. All schools in Thailand that attend the training program. This is a small group discussion. We have almost ten groups. This is the facilitator. This is another group. They are very active when they attend the training. So, at the end of the training program they are identified that they want to increase the length of teaching TB in classroom, which is good. But, we couldn't change the curriculum because the curriculum must be approved by the bar of the University of the school, so they decide that they could teach the students after the school. I have not followed up yet because you know we just started last year. So, because of some school they teach in the second semester give them some from time then I'll follow them up what happened after the parents identify here.

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They want to teach TB content consistent with the National TB Program, which means that if you add more about TB control program, rather than the [inaudible] management. We motivate students to perform TB research. Because after the training program we have a lot of students to the TB program, that the students are interested in TB and then we hold them. Another thing about, they add TB topics in the regular meeting, the conference of their schools. One year we have almost 10 schools invite to speak in the conference, to be facilitator in the post-grad college, which is very wonderful.

We have the committee of TB education in nursing schools and the committee has the responsibility to provide consultation for all faculty members. We draft our TB manual for under-grad students. Obviously, you add U.S. Web site, because I'm not a teacher. I need to have a lot of input from them because they need the teaching plan and the exact time for each topic. So, if it's kind of they work back and forth because I want them to use it. So, this means that we need a lot of input from them to sort what they need. Absolutely, they need the samples of the examination. I'm glad that you came today and I can check on the web site what kind of the samples are.

The committee could link the nursing schools into the National TB Program. As you know that when a serious epidemic

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affected TB control program, no less change all the time. Last year we talked about [inaudible] counseling and testing. This year we heard a lot about [inaudible] testing in TB patients and we heard a lot about XDR. So, they need to keep update about what's going on in the TB so the committee will be the goal connection to the nursing institutions. The committee need to follow up with family members who attend the training. They change the teaching strategies as they identify after the training or not.

What we learned is that our family members are really busy. But, there are interest to learn about TB and to use this knowledge to teach their students. We learned that before we start the program. TB was almost neglected from the nursing curriculum and that they don't know why, they just ignore it. So, after the training they add more the TB content. Because I assume they have the connections with these family members and try to keep in touch with them, but not formal. Because we have our formal evaluation next year.

We learned that TB has been taught in the nursing schools in a different way. As we found that five minutes until five hours. Sometimes it's just five minutes that teach about TB treatment and that's it.

Educational materials, because I and my colleague went and visited some nursing schools in the library and tried to

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find TB materials on the shelf, but we couldn't find it. Because I think that maybe the poor communications, something happened. But, eventually we right now have the list of contact person in every school and we send them the materials, whatever we have. So they have that one right now. Before we start the program the links between the National TB Program and the nursing schools are missing. So, that's why I think this is very important, because we know what's going on in the nursing school and they know what's going on in the National TB program. So, their links should be established.

Things we learned along the two years of the project for the team-building is very helpful because like in Thailand, the nursing schools vary from the big one they have 200 family members, from the small one they have 20 family members. So they can share resources together because they have connections and different experience. Because like, for example, one school of nursing from the North experience for carrying TB HIV patients. So, if in Bangkok they have this kind of patient they can ask help from the North. We believe that formal training for family members is very important, because if we just give them a manual I believe that they don't need it. So, try to get them in a formal training program like we did in two days, so they can ask. Because TB is not simple as people think. Like for me, when I started working on TB it took me

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one year to understand about a TB program. So, think about people who don't know TB before. So when they attend the formal training program they can ask things that they don't understand from the facilitator. If you want to work with nursing schools we found that the committee is very important because the committee I formed leaders of each school s they have influence to push things inside that school. Because if we don't have the committee or we just invite the small one in the institutions, they couldn't go back and change things which we want to do.

This is my last slide for the presentation. I want to conclude that from our experience, TB education should be in place in nursing schools, especially the undergrad students. We found that TB education in nursing schools in Thailand vary from school to school. I believe that from other countries might have the same thing as in my country does. For the team-building, because I think that if you are a nurse and you talk with nursing schools would be easy. I don't [inaudible] from my experience because we speak the same language and they feel comfortable. So, I think that is very helpful because if you are a physician and you have links with many hospitals, the team building will be work because the nursing schools in Thailand they have their own culture. So, sometimes it's not simple to just go there and ask them to attend the training

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program. So, you need a lot of peer groups like you know that these schools influence other schools so you ask the school to ask us to invite another school. So, things happen and it's time consuming, but I think it's worth to deal with them anyway because they have at least each year 5,000 nursing schools graduate. I don't know about other countries, but this is from our country and I hope that if you like to start, maybe this one could be lessons learned for you. Thank you.

[Applause]

RAJITA BHAVARAJU: Are there are any questions for Sirinapha?

FEMALE SPEAKER: I just wanted to make a comment. When you had mentioned about sort of this peer process of having similar faculty members talking, I saw a lot of people in the audience sort of shaking their heads, so it sounds like it might be something that's similar in other areas.

SIRINAPHA JITTIMANNE: Yeah, because, you know, I know that when one school they have new things. Because usually they meet each other anyway in the annual conference, the group meeting they tell okay, do you have this one, because I have this. They talk to each other. From my experience, they have a post-grad cause and they don't know the topic or the speakers there should invite. A lot of schools are like, okay, ask this one and then she can suggest you. So I think peer group is

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very helpful because it's informal and people feel free to ask help, rather than formal groups, something like that.

RAJITA BHAVARAJU: Thank you. You have a comment or questions?

ANTONINO CATANZARO: I just want to make a comment that we observed the same thing in our group. As Marguerite stressed, we had eight different disciplines and the easiest discipline to work with was the nursing discipline. There seems to be a natural tendency for nurses to work together as teams and they work very well together in our group. It sounds like you experienced the same thing in Thailand.

The other thing I wanted to say is you were lamenting, it sounded like, that you had a small number of schools, but I think that's a big advantage. Because I was envious watching you bring representatives from each school into one room and talking about the problems that you have. I think that's remarkable that you're able to do that. So, I think you should enjoy that.

SIRINAPHA JITTIMANNE: Oh, thank you.

RAJITA BHAVARAJU: Thank you, Sirinapha.

SIRINAPHA JITTIMANNE: Thank you.

[Applause]

ZEKI KILICASLAN: I will try to introduce next speaker, Dr. Elena Yurasova. She is with the WHO office in Moscow. She

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provides training and technical assistance in the WHO Europe Region. Please.

ELENA YURASOVA: Thank you very much. I will represent some experiences from our region when introducing programme management in medical schools curricula. We will speak about very big importance of TB management training for the countries in the region, ways of integrating this important part of training in the post-graduate medical training, and we will represent the experience of the Northern State Medical University of the Russian Federation, speak about some challenges and lessons learned and make conclusions.

So, TB is a very important problem and it was announced as emergency in the WHO European region, with 80-percent of new cases coming from the Eastern European countries and mainly from 16 countries, which are former Soviet Union and Romania. Russian Federation is the only high burden country in the European region, so everything which happens in Russian Federation is extremely important for TB control in the region. That's why we will look at one experience of this country later.

You can see that DOTS coverage and case detection is not optimal in the region. There's a lot of things to be done. And the recently resources of the World Bank and Global Fund have become available and this also puts additional challenge

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at the Human Resource Development.

Recently, in the new plan to expand TB control and reach millennium development goals in the European region the following challenges were announced. The cross cutting for all issues is human resource crisis and the importance of human resources for TB control. Among the problems with human resources, we don't speak about shortage of staff, but we speak about training in TB programme management, which is key for successful DOTS implementation. Unfortunately, the issues of program management as it was mentioned by also previous speakers, is not represented properly in the curricula of the medical schools. Up to 10-percent of courses sometimes do include organizational issues, but with the changing of the situation and changing of approaches of TB control, in the medical schools, this organizational principles sometimes are out of date.

The weak approach to training of managers and other health system workers has been pointed out in the recent report on Human Resources in the WHO European Region. As there is not enough attention to specific managerial skills developed in the public health manager. So in the Russian Federation there is existent state standard for post-graduate training of specialists. The specific discipline is phthisiology. The later standard was approved in the year 2000. It has been

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published by the Center of Training and Methodological Association of Medical and Pharmaceutical Schools. It has been agreed with the Minister of Health and, maybe what is important, it was developed by TB specialists of one of the leading medical academies in country. It covers all stages of post-graduate specialist training and includes fundamental training in, you see, the disciplines here listed.

The standard consists of standards or obligatory federal component and the regional and national components, which could be changed depending on the situation and specifics in the subjects of the Russian Federation. The standard list practical skills to be developed provides appropriate evaluation tests and provides lists of suggested reading.

You can see here the numerous types of post-graduate medical training in phthisiology, which is quite profound and there are lots of possibilities here. What I want to show that, although there are quite long internship, fellowship, and various specified training courses for specialities, the minimum requirement for the selective training course, which will be granted with a certificate valid for specialist as post-graduate education is 72 hours. Therefore, we know the WHO training course on TB management at the district level, or in Russia we call it at the municipal level, which for example, is short for this 72 hours. So, this was one of the challenges

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of incorporating training into the official framework.

So, currently we found two possible ways of integrating management within the post-graduate training. One is the extension of the five day training course, up to 72 hours by introducing variation of in-class and distance learning approaches. The second, which is maybe more appropriate way, is modification of the standard certification training curriculum for TB specialists, by even including of TB management components into the regional so-called flexible part of the curriculum by medical schools or in perspective, including TB management in the core federal component of the curriculum.

Here you can see the development of the training material on TB management at the municipal level. The WHO models were presented in '94 and with the first DOTS pilot project in the Russian Federation they were used for first trainings in the country. As the time passed, DOTS pilot projects developed high level working group on TB control was established. MDR-TB issue became prominent. In 2002, WHO and CDC together with Russian colleagues revised the modules based on the DOTS country experience and making it more appropriate to the health system structure in the country. However, since that time DOTS expansion continued and many principles of international approach to TB control were incorporated into the

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national regulations. The Minister of Health issued two orders, which incorporated key principles of DOTS, such as treatment, diagnostics, recording, reporting and DOTS plus projects were also started and expanded in the country.

With the five-year plan developed, the Global Fund project and World Bank started in the country and provided resources for that. Therefore, it became clear that in order to have this course acceptable and widely used in the country, the new adaptation by the National TB Control Programme, which was done with WHO support, is necessary so that all this new approaches listed and the Minister of Health orders would be reflected. The modules were enriched with the module on TB in prisons, facilitators guide became based on more interactive methods and adult learning basics. Currently, those modules are under approval by the Minister of Health for post-graduate training. As you see with the stars, our hope is that after it's approved and there's not anymore WHO guidelines, is the national guidelines for TB control. This module will be integrated and the positive normal standard for tuberculosis specialists and for general practitioners. We hope it will be within the National Plan to Stop TB in 2007-2015, which countries to develop.

Currently we have post-graduate selective thematic training courses in TB program management. As I mentioned,

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managing TB at the municipal level, ran by Federal Research TB Institutes, which also provides supervision and control in the zones of their responsibility. Their supported by the World Bank and Global Funds, which are country funds. They're not exactly external funds, because this is the funds the country receive and the second base of strengthening management of TB control programs is there a new two-day training developed for heads of regional TB services, which present primarily managerial principles and skills. It is done in cooperation with the Russian Medical Academy of Postdiploma Education and training is funded by the Global Fund project.

You can see here some pictures of the training, which was done on this training at the municipal level. Here you can see faculty at the post-graduate training at the Postdiploma Medical Academy. We think that this is a very good beginning for involving postgraduate institutions in the training for TB control.

Now, I'd like to present your experience of one of the medical schools. Its representatives are here in this hall so if there would be some questions, more definite they'd be happy to answers. So, Chair of Phthisioplumonology of the Northern State Medical University is based in Arkhangelsk, which is Northwest of Russia. They provide undergraduate education, post-graduate training and thematic training courses.

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Historical steps of the involvement are that in 1991 the first experiences of short course chemotherapy introductions were in the hospital of the regional TB Dispensary. Since '94, studying of the WHO DOTS guidelines started. The pilot project on DOTS implementation in Arkhangelsk was started in 1997 started by the Norwegian Association.

Here we can see that actually there were many issues, which became very favorable within this University. Of course, the curriculum for specialists includes here 144 training hours and various important aspects of TB and TB control are incorporated into the course. But the important thing is that for all faculty members attended themselves international courses on DOTS and DOTS-Plus learned themselves from DOTS and DOTS-Plus pilot projects. They all participate also in providing technical support of this project and what is important, the training is implemented at the basis of the regional TB dispensary. So the links with practical interventions, which is very important are there. The materials used are part of the Minister of Health recommended, there are WHO guidelines, UNION guidelines, Crofton's tuberculosis work, CDC, Harvard, and other latest information is available to the students.

This is the picture of the regional dispensary in

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winter. You can see that the overall objective put for the training course is very comprehensive and quite ambitious, but it shows that the problem of tuberculosis is considered in full complexity. The training objectives are quite multiple, but also we should remember that the course is quite long. So there is a room for putting forward all this information. Here doctors can have principles of basis DOTS, but also they can get information on the modern bacteriological methods, with primary attention to smear microscopy. They learn and try to implement themselves quarter recording and reporting. They see, of course, organization of treatment for sensitive TB patients and for MDR-TB patients and what is important, attention is paid to training of medical personnel, doctors, nurses, laboratory workers, and social workers, to implement DOTS. So there is quite wide range of objectives covered by the training course.

The methodologies used are based on the adult learning principles. There is mixture of lectures, practical exercises, group discussions, brainstorming, role games. Of course, attempting clinical commissions and case studies, recently, Internet-based search for evidence and using internet for doctors, is implemented. Visiting laboratories and group discussions on the practical implementation of DOTS plans and the regions from where participants come. The last place is

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using WHO training modules, the course as such they don't provide full range of information and there were especially good for training nurses and social workers. But training of doctors required more variety and more complex information.

However, we can see that funding for Minister of Health and Social Development provided funds and also extrabudgetary funds of the local regional authorities. There were several courses funded by the international agencies and World Health Organization provided published documents and guidelines. So, we can see that this training is very sustainable. Of course, it is within the existing financial system of the country.

The after-training follow up is a very important component. Faculty provides supervisory visits to the regions upon invitation. There is continued communication and advice to former students and technical support is provided to the DOTS and DOTS Plus project in the Arkhangelsk Region and Kom Republic. So you can see the training outcomes since 1997, which are quite impressive.

Challenges. Initially there was resistance to DOTS based on the opinions of the well known and authoritative experts and sometimes lack of primary information, so people learned about it from each other or what they heard from someone so sometimes there was misconception of limitations within the DOTS approaches and that does not actually prohibit

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something, but it rather puts priorities to TB control. Information on the WHO training materials, which is good for district levels sometimes did not provide information on complex issues, such as MDR-TB and TB/HIV, which were interesting for doctors and which are needed for some kind of more comprehensive approach in the post-graduate training. But definitely this information must be part of the training courses.

The problem was until DOTS was integrated into the national strategy and, of course, there were some discrepancies between the WHO and definitions and the National Minister of Health regulations. Sometimes it's wording, but recording and reporting forms, wording means a lot.

The lessons learned show that national regulations in line with WHO recommendations remove actual obstacles in integrating TB management as positive [inaudible] curricula tuberculosis and it ensures sustainability and continuity of the training activities. More than that, official status of training provided by medical schools improvement credibility of the training for individuals and for health care institutions. As there are requirements for obligatory post-graduate continuous education so we can have this needs for training met also for these institutions.

For TB specialists, managerial principles DOTS and

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DOTS-Plus should be complemented with some clinical aspects so that they could imagine themselves, not just the paper, but the patients whom they meet. Of course, not all of them are managers. At the same time, it's important that every doctor understands the structure of the managerial system of TB control and place of each person in this system. So, the lack of national regulation documents does not necessarily prevent medical schools from introducing training on the organizational forms of care in line with international recommendations, because there is this flexible part, which each medical school can develop according to its opinion.

And of course, to be effective on TB program management, TB chair faculty must be knowledgeable and ideally involved in practical implementation of DOTS. Of course, then this training will be based on real experience and it will be immediately noticed by the students.

So, the conclusions that we drew from these experiences that post-graduate medical training institutions can and must be involved in training of modern approaches for TB control. The principles of TB control management at the district level, must be present within ever post-graduate course on training on tuberculosis. However, managers working for TB control programs should have additional training on public health management, with an emphasis of TB control specifics.

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Thank you very much.

[Applause]

ZEKI KILICASLAN: Dr. Elena Yurasova, thank you very much. Is there any questions?

FEMALE SPEAKER: I have a question for you, Elena. You had talked about some sort of using adult learning principles, some of the techniques that you've used such as role playing and interactive learning. How have these fit in terms of the traditional way of teaching that you've used in this particular group? Have they been accepted? Do those learning methodologies go very easily when you have to use this type of methodologies for individuals?

ELENA YURASOVA: Yes, I think so. Recently, actually, there are maybe two aspects. One aspect that recently all the training courses which are run in the Russian Federation, more and more looking at this aspect and we have special tier training course together with CDC, teach back, which also yesterday I think was presented by Latvia, which demonstrates importance and it's very well accepted by the post-graduate audience.

At the same time, I think that in the post-graduate schools, more and more attention is paid to that of learning methods. There is special two-year course for features of positive flow medical schools, looking how to teach the people

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who have their own experience and knowledge. I think it may be a slow process because of the size of the country, but this concept is getting more and more appreciation.

ZEKI KILICASLAN: I will try to introduce next speaker, Dr. Alvin Mojica.

[Applause]

Dr. Alvin Mojica is professor of medicine and dean of the National Training Center for the Health Profession in the University of Philippine, Manila.

ALVIN MOJICA: Thank you. I'd like to take this opportunity also to thank the organizers for bringing me over and to share this with you.

This will be the outline of my presentation. First we look at the rationality for integration of TB DOTS in the allied health education. Second, we will look at the philosophy and process of curriculum development and I will share some updates.

This is the Western Pacific Region. To your left is Asia, to the South is Indonesia and Australia and to your right side is the Americas. The Philippines is the small dot here. There. Even though it's a small dot, it actually runs nine out of 22 TB high-burden countries. Not to mention it runs third in the Western Pacific Region. According to the latest WHO and NTP estimates, the incidences is about 293 cases per 100,000.

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The highest incidence is among the working males and the urban poor. However, HIV is not a problem in our country, with regards to TB patient.

The dilemma is that more than 50-percent of symptomatic TB patients do not seek medical care. About 25-percent of symptomatic TB patients self-medicate. The thing is a TB sufferer can go to the pharmacies and ask for medication, but won't even ask for an anti-TB drug, you will ask for a cough medicine. Of course, the patient only gets worse because of that. If this patient goes to the health center the frontliners will be either the nurse or the mid-wife.

With that as a background, the Allied Health Core Team was formed. There was funding from USAID and the Philippine Tuberculosis Initiatives for the private sector. The Allied Health Core Team is composed of a health professions educator, pharmacist, a nurse and a medical technologist.

This was our plan of action. First we wanted to do a needs assessment and then try to develop teaching and learning materials for revised disciplines and get the commitment of the private stakeholders.

So we identified by stakeholders and revised disciplines and this included students and faculty members, the schools themselves, the various organizations involved, as well as TB researchers and personnel of the TB DOT centers.

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So initially we did an appraisal of existing TB curriculum and, as mentioned by the others, only the basic aspects were actually highlighted. TB was discussed as a disease and management was not emphasized, especially DOTS. DOTS was never discussed in majority of the schools.

So the recommendation based on that initial appraisal was, number one, to develop a TB DOTS core curriculum. Second, to train the faculty and, third, was to consider also training of specific TB educators.

So the next thing we did was to develop teaching modules. We gathered about thirty representatives from each of the disciplines together with some local and international experts and separately tried to develop the teaching modules with the following philosophy: Had to be competency-based and it should be in the context of a national and global health priority. Also, the competencies to be developed are those that are required by their roles and responsibilities in the health system. There was a lot of discussion on this. It should be integrated in the Allied Health Profession Curriculum without altering the time allotment to various subjects with interdiscipline. Also, it should promote cooperation among the health professions and promote value formation. Lastly, there should be opportunities for continuing education.

So this is an example of what we did. Since it was

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task-based, we first identified the competencies in the management of TB DOTS, then we made general objectives and then we made the specific objectives, identified the topics and, of course, that particular competency will be integrated.

This was the format of the module. There would be a suggested level of teaching the subject or the subjects for integration. As I mentioned the objectives, the content, sample evaluation, as well as the references.

So, this is an example, see there's suggested year level there. The subjects for integration, identified the objectives, the content and then devise teaching learning activities, we also identified the resources, the time, as well as the type of evaluation.

This was the sequence of TB DOTS modules that we prepared. We first looked at epidemiology, the burden of disease, psychosocial and economic aspects. The second module talked about pathogenesis and clinical presentation. The third, diagnosis and management and the fourth is roles and responsibilities of the Allied Health Professional.

The third module the diagnosis and management looks very medical, but actually, in the nursing profession, it actually involves the nursing process, nursing diagnosis, as well as nursing management. For the pharmacists, this actually involved therapeutics as well dispensing of drugs and also

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screening and counseling of patients. Well, as for the medical technologist, this involved the appropriate way of microscopy.

So, the pharmacy curriculum in all the schools was changed. Now the pharmacist not only dispenses, but also screens and counsels TB patients. The nurse is the direct care provider, the case manager, as well as the health educator. The medical technologist should be a good or an excellent microscopist.

After we did the modules, this was presented to a local as well as an international expert panel. There were several revisions, modifications, repeat presentations. Finally, we were able to consolidate modules. This is how it will come out in the revised disciplines. There are the medical technology, nursing and pharmacy courses in all four years. In medical technology, they want to start at the first-year level, with look at the TB burden. Second year the pathogens and third, this will be an emphasis now on microscopy and the microscopy involved in DOTS strategy. In the fourth-year level, this will emphasize the role of the microscopist, as well as research methodologies.

For the nursing profession, they wanted to start at the second-year level. For the second year, they will initially start with health promotion, the roles of the nurses. Then on the third year, they will now look at the TB DOTS and do some

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related learning experiences. At the fourth year level the nurses will emphasize now on being administrators.

For the pharmacy courses, the TB DOTS modules will start at the third year. As we look at treatment the DOTS strategy as well as dispensing whereas at the fourth year level we will now talk about screening and counseling.

So after the consolidation, we then presented the module to the various stakeholders and at the end of the presentation we did commit the ceremonies. We had these banners laid out and the various stakeholders signed their names. The next day, we also invited Minister of our Health Department, who also signed.

So, how are we doing right now? For the pharmacist, a training of trainers was already done and they are just waiting for the implementation at the third year. For the medical technologist, private testing has been done in one university and they are awaiting formal endorsement from the national government. Unfortunately, for the nursing professions and the nursing schools, it's still awaiting implementation. It's sad because the nursing profession is an export industry in the Philippines. We have 450 nursing schools compared to about 30 medical schools and other disciplines. We graduate about 30,000 nurses every year. Of the 30,000 nurses, about 24,000 leave the country every year. So, I'm not surprised that this

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is still waiting implementation in the nursing school.

So in summary, what have we done? We did the curriculum appraisal, we developed the teaching modules, we got the commitment and we are starting to monitor implementation.

Thank you very much and may I greet everybody in advance, Merry Christmas.

[Applause]

ZEKI KILICASLAN: Thank you very much, Dr. Alvin Mojica. Is there any questions? This lecture-

RAJITA BHAVARAJU: Okay. I'd like to invite if there's any questions, any additional questions or comments for any of the speakers. Or, I'd also like to ask if any of you have had experiences with integrating TB into any of the health services, pre-service curricula in your institutions. If you've had experiences, either positive or negative, and how those situations have worked. So, I invite any other individuals to ask any questions or provide any comments.

Okay, then. Is there a comment in the back?

FEMALE SPEAKER: Thank you, Alvin, for a great organized presentation. I'd like to add the implementation of the pharmacy module actually included several islands and cities in the country. In fact, the Pharmacy Board has now included the DOTS curriculum in the certifying board of the country to have their pharmacists learn that. I'm surprised

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with the nursing school, but I think it's the resources that are limiting them to do implementation. I think the TB educator portion was separate after that led the way. So, the physicians led the way and Allied Health will be the next group that's ongoing.

RAJITA BHAVARAJU: Okay. Go ahead.

JOSEPH [Inaudible]: Thank you, I'm Joseph [inaudible] from Uganda. I wanted to ask, I don't know which particular one, but any experience if there are in those countries of colleges or institutions for teachers, those who produce teachers for the paramedical or nursing schools, rather than the schools themselves, where the institutions which produce the teaching staff for the institutions, what is being done in connection with preparing them to provide appropriate training for TB or TB and HIV?

RAJITA BHAVARAJU: I think a number of individuals had alluded to that the people who were actually doing the training at the level are not teachers themselves or may not be TB experts. Do any of you have any comments on how you are ensuring that the people who are actually providing the teaching are well prepared in terms of TB content expertise, as well as teaching principles in general?

MARGUERITE JACKSON: In the United States in the health care disciplines, in our experience, all of the people who are

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the teachers have to be educated in the discipline to start with. So, a person who teaches nursing has been through nursing school before they become a teacher of nursing. That's true in the other disciplines as well. But, our NTPC project is really directed to the faculty to ensure or provide content information as well as process information so that when those faculty teach about TB, they're teaching accurate content and using methodologies that are sound from an educational standpoint. Tony, did you want to add something else to that?

ANTONINO CATANZARO: Yes, I completely agree, that teachers come from that profession. But, what I wanted to say is that several of the presenters stressed train the trainers. We've not really done that per se. But what we've done is to try and take advantage of the fact that many times, as the first comment that Rajita asked me about, was how do we get more time to teach about tuberculosis? One of the basic strategies that we have is to say for example, create these learning modules and have one around geriatrics, for example, and have the case be a case of tuberculosis. So that when a young faculty person is given the assignment to teach something about geriatrics and they don't know quite what to do, hopefully they might go to the Web and look around and find one of our computerized cases. Our computerized cases are constructed in such a way that not only do they teach the

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student, but there's a lot of material for the teacher to give them background and deal with the questions that inevitably will come up. So, while we don't have teachers per se, we don't have a training program for training the trainers, we're kind of feeding them as they go along. I'm not sure which strategy is better, but that's the approach that we took.

While I've got the microphone, I'd like to say one more thing. That is, that while, as Marguerite emphasized, the products that we've created are made for American medical students and nursing students and pharmacy students, et cetera. Many of the principles are equally usable in other countries. You're more than welcome to use them. I'm quite happy to work with other teachers who may want to have a different approach. The American approach emphasizes preventative treatment. So we emphasize the diagnosis of latent TB and the treatment of latent TB and we have a lot of emphasis on HIV/TB diagnosis, as well, and active TB. But there may be other things that you may want to stress in other programs, but the active learning principles, is really common to everyone, that all presenters really stressed active learning. The thing that we're doing which I think is good is making it kind of automated, computer based, so that we can teach 100,000 students without having to sit there and actually teach them.

RAJITA BHAVARAJU: We have a comment on this side of

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the room.

KRISHNAN: Yes. My name is Krishnan from Ethiopia. I'm talking on behalf of [inaudible]. We developed curriculum for tuberculosis to work in collaboration with HIV and AIDS. It's [inaudible]. I think you can take the brochure from number 25, [inaudible]. We work with DOTS and International [inaudible] Department. We work with a national program with the Minister of Health, very closely and also the [inaudible] regional officers who are working. So we focus exclusively on task-based curriculum as exactly as the last speaker to get the people into task. We teach them what they are supposed to do by showing, by allowing them to do it on the spot. Thank you.

RAJITA BHAVARAJU: Dr. Rashman.

DR. RASHMAN: Thank you, Zeki and Rajita, and the speakers for a great symposium. I'm rising just to answer your question about really how you get people who are knowledgeable in the discipline to be teachers. So I give you a little history that really led to Tony and Marguerite's Tuberculosis Curriculum Coordinating Center.

In about 1975, the National Heart, Lung and Blood Institute was involved in promotion of the then relatively new discipline of pulmonary medicine. Pulmonary medicine is becoming a very popular area. It was no longer dealing with TB and TB sanitoriums and they said how do we spread pulmonary

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medicine? So, they created what was called the Pulmonary Academic Award. Because the United States, the way you get people interested in something is you give them a grant and they get money and they do what you want to do for the money and they get tenured, but they do whatever the objective of the National Heart, Lung and Blood Institute is. So, they had Pulmonary Academic Award. I think they had a competition and they funded it for several years. I think they had about 20 or 30 different sites. Each site they funded an investigator whose job was to develop a curriculum in his medical school for the discipline of pulmonary medicine. It worked very, very well and they were oversubscribed and then they stopped after a while.

Then the same people said, well, how do get people involved in preventive pulmonology and preventive pulmonology was smoking control, TB prevention, occupational medicine and things like that. They used the same mechanism and they had a competition and they had people and then they supported investigators in 20 medical schools, I think it was, who then developed a curriculum in preventive pulmonology. There was a whole lot of very good attention. So, these people who might be just investigators or interested in pulmonology suddenly had to teach because those are the objectives of the curriculum.

Then the same people at the National Heart, Lung and

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Blood Institute said why don't we do TB? So they organized what they called the Tuberculosis Academic Award. That was at the time of the resurgence of tuberculosis in the United States. It got a lot of attention. What can each of the National Institutes of Health do? So the National Heart, Lung and Blood said let's do TB, that's a lung disease essentially and they were able to do lung disease. So they funded, I think, 20 or so institutions doing TB, TB control, but again, getting these investigators who are interested in tuberculosis and they were largely pulmonologists, some infectious disease people, to get involved in curriculums in tuberculosis. That went so well that then they had a competition. They said we can't keep having an individual investigator, let's have one place coordinate all of them and that's what led to the San Diego Consortium.

So, this is just a response to how a research institution says, well, we got to train people, they went on, took the blunt and did it and it was extraordinarily effective.

RAJITA BHAVARAJU: Thank you. Dr. Mojica.

ALVIN MOJICA: In the medical schools in the Philippines, we also have the same competition and this is held every year. There is an award for the school which has the best curriculum or education material for the patients. This actually involves also giving out like umbrellas and bowls and

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different types of materials for our patients, including comic books. It seems to be very successful. It's being promoted in all medical schools.

SIRINAPHA JITTIMANNE: I want to share my experience about how we start the team-building in Thailand, just in case Philippines can use this. Because maybe you need to find a nurse to contact the nursing schools. Because you know the first question when we ask about the training they ask who teach, the doctors or nurses? This is of nice banners from the National TB Program and we get a lot of responses from them. This is the culture and sometimes it's very sensitive. But we need to learn from different professions. The same thing, if you invite the physicians to attend the training, if you have the facilitators as a nurse and you have this the same thing. And this is a technique that [inaudible]. In my country, they teach TB in different classes. Like in community health nursing, they teach about a home visit for TB patients. So they need the TB content for the home visits for TB visits. Like for the infection control class, they want to have the separate TB patients from the general patients. How long they can keep TB patients in the separate room, should wear gown, glove and mask and whatever they don't know. So, when they attend the class, okay, they know what they need to do and then they go back. We work together to the job site. If they want

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to teach the infection control subject they can use TB as example for that one. Nursing students need to study about epidemiology, three credit hours, and we add a lot of the TB situation like if they learn about prevalence, they can use the TB prevalence in that one. If they learn about incidence, they can use this one. This is all our experience. That's why I think it's not easy, because they need different things. If there are piece about adults so they need to learn about the [inaudible], the treatment, diagnosis, how to produce good sputum. But if they teach about health promotion, so they need a different content. You know that's why I think that [inaudible] from different causes, what materials do you have, because we have the different teachers from different subjects. So, we come together to try to identify the learning materials for the students.

RAJITA BHAVARAJU: Do we have one more comment from the back?

FEMALE SPEAKER: I'm thinking that the specific question was, how do you train the trainers or who will be training? Is that what it was? That was your questions, yes. Dr. Mojica's project involved a separate module for the teachers that matches the students modules. They work on those questions and basic DOTS questions so they have the same questionnaire, but the materials are also provided to faculty.

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So, it's a train-the-trainers module. You have a teachers' copy and a students' copy, who may not have all the answers.

RAJITA BHAVARAJU: Well, I'd like to thank you all for coming today. I think this is a very important topic, as I had stated early on in terms of the theme of the entire conference of human resource development. Many of the presentations we've seen in this conference, there has been very much mention of putting TB into the curricula of pre-service professionals as well as in post-graduate training as one of our presenters has presented on today. In common in all these presentations, people obviously addressed that there's lack of TB content, or at least appropriate content or very little content. What was interesting is that all the speakers discussed, not only the clinical content related to TB, but the public health content as well as management of TB from a programmatic standpoint.

We heard again the common theme, I think, as was also brought up in the question that we also have to ensure that the people who are teaching these topics have expertise themselves in TB as well as the practical experience in TB control and working with TB patients. What was also of interest was that many of you speakers also brought up the issues of the psychosocial aspect of tuberculosis, as well as calling the health care worker as a health educator or a health promoter, which I thought was also interesting that I think all of you

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had emphasized that.

And finally, again, there was a lot of emphasis, not just on the classroom environment, but the practical aspects outside of the classroom. The hospital or the clinical training as well. So, I thank you all. I think we had some good discussion today. I hope you all had some ideas that stimulated some thoughts for you to go back. I encourage you, I'm taking the liberty of encouraging all of you to perhaps contact the speakers because I'm sure they'd be willing to share some of their instruments, their surveys, their needs assessments, things that they've been using for you to adapt as well. Thank you very much.

[Applause]

[END RECORDING]