



INTERNATIONAL COUNCIL OF NURSES (ICN)

# Tuberculosis/ Multi-drug Resistant Tuberculosis Project

**2005-2020**



## FOREWORD BY ICN PRESIDENT **ANNETTE KENNEDY**



The ICN TB/MDR-TB project has come to an end after 15 successful years, during which it vastly expanded the capacity of the global nursing workforce to prevent the spread of TB and provide care and treatment for people with this very serious condition.

The project trained thousands of nurses and they, in turn, passed on their knowledge and skills to around 180,000 nurses, other health professionals and community

workers in 17 countries on three continents.

I would like to thank the ICN staff who ran the project, especially Project Director Carrie Tudor and Gini Williams, for making it such a prestigious and successful project.

ICN's TB/MDR-TB project has, I have no doubt, prevented countless deaths and made so many other people's lives more bearable as they cope with the everyday reality of living with TB and its treatment.

Although the project has now come to an end, I am sure its legacy will live on as the nurses who were trained over the past 15 years, and all the other health workers that they trained, continue their great work in combating the scourge of TB.

Annette Kennedy  
ICN PRESIDENT



## The ICN TB/MDR-TB project vastly expanded global nursing capacity in the prevention, care and treatment of TB.

But TB continues to be a major global health issue, and while it is a curable disease, it is the leading cause of death by a communicable disease, surpassing even HIV/AIDS.

The World Health Organization (WHO) estimates that there are 10 million new cases of TB each year and more than 1.5 million deaths. In addition, there are an estimated 500,000 new cases of drug-resistant TB (DR-TB) each year which is more difficult to diagnose and treat. Every day, more than 3,500 people around the world die from this curable disease.

Treatment for drug-susceptible TB takes six months with a combination of four drugs that unfortunately can cause unpleasant side-effects.

Many people with TB will feel better long before their treatment is completed, which leads many of them to stop treatment prematurely.

Nurses are uniquely placed to provide holistic care to people with TB and give them the psychosocial support and health education they need to help them manage side-effects and continue treatment.

The role of nurses is even more critical in helping to manage patients through DR-TB treatment, which can take from nine to 20 months, with patients having to take up to 21 pills a day, more if they have comorbid conditions.

The side-effects of several of the medications used for DR-TB treatment are serious and can cause great discomfort to patients. And the burden of treatment on patients is made heavier because of the need to frequently monitor potentially life-threatening side-effects.

Despite these difficulties, many advances have been made in TB in recent years, and between 2000 and 2018 the mortality rate decreased by 38% (WHO 2019 Global TB Report).

In many parts of the world, nurses are the main source of care for patients with TB and it is critically important that nurses are knowledgeable about TB, its diagnoses, treatment and care, to ensure that patients receive the best care possible as the global health community strives to achieve a TB-free world.



**I have been empowered with knowledge to help me contribute towards improving the care of TB patients.**

LOVENESS CHIKUMBI, ZAMBIA





## THE ICN TB/MDR-TB PROJECT

The ICN TB/MDR-TB project, which was part of the Eli Lilly MDR-TB Partnership, improved the care of patients with TB by training experienced nurses, who then cascaded their knowledge and skills to nursing colleagues and other health workers.

The training courses were run in countries with a high burden of TB and MDR-TB, where ICN has a strong working relationship with the local National Nurses Association.

The practice-oriented nature of these Training for Transformation courses, which used a patient-centred approach, enabled nurses to improve the way they put policies and guidelines into practice.

Since 2005, the ICN TB/MDR-TB Project trained 2,318 nurses in 18 countries in Africa, Asia, South America, and the Russian Federation. Those nurses have, in turn, rolled out the training to nearly 180,000 nurses, doctors, allied health workers and community members, which means each nurse trained 78 additional people, on average.



## NURSES BECAME THE TEACHERS

The ICN TB/MDR-TB Project built nursing capacity in the prevention, care and treatment of the condition. The project equipped experienced nurses in low- and middle-income countries to cascade information to nursing colleagues, nursing students and other healthcare workers to improve patient care delivery. A transformational training package was developed with nurses to enable the distribution of essential information and skills to affect lasting improvements in nursing practice and patient care. The strength and sustainability of the project relied on nurses providing quality training to other nurses.

**TOP** Nurse in Indonesia counseling a patient on side effects

**BOTTOM** Nurse seeing TB bacteria under a microscope for the first time (Lusaka, Zambia 2016)

## THE PROJECT'S ACHIEVEMENTS

The most motivating part of being a nurse in the field of TB is to see patients recover and go back to their lives. By building the skills, knowledge and capacity of nurses at all levels and in all contexts, including in clinical practice, teaching, management and research, the project enabled nurses to provide the quality of care they knew their patients needed to make a full recovery.

The project supported ongoing training in-country through local National Nursing Associations and was regularly evaluated for its impact on the care and treatment of patients. There is good evidence of lasting changes made and improved patient outcomes, which were evident through regular review and local research projects carried out by the nurses following their training.

The project was instrumental in enabling significant numbers of nurses from Russia, China, India and different parts of Africa, to publish and present their research at national and international conferences for the first time.





I got so capacitated that I became confident to run the TB programme smarter and more efficiently than what I did previously...

MAKHUZE M. MBIKO, SOUTH AFRICA

CHANGES MADE TO PATIENT CARE

91%

report a decrease in stigma towards patients

78%

report an increase in case detection

85%

report improvement in patient treatment adherence

83%

report improved emotional/psychosocial support provided to patients

82%

report improved education to patients and family members about TB

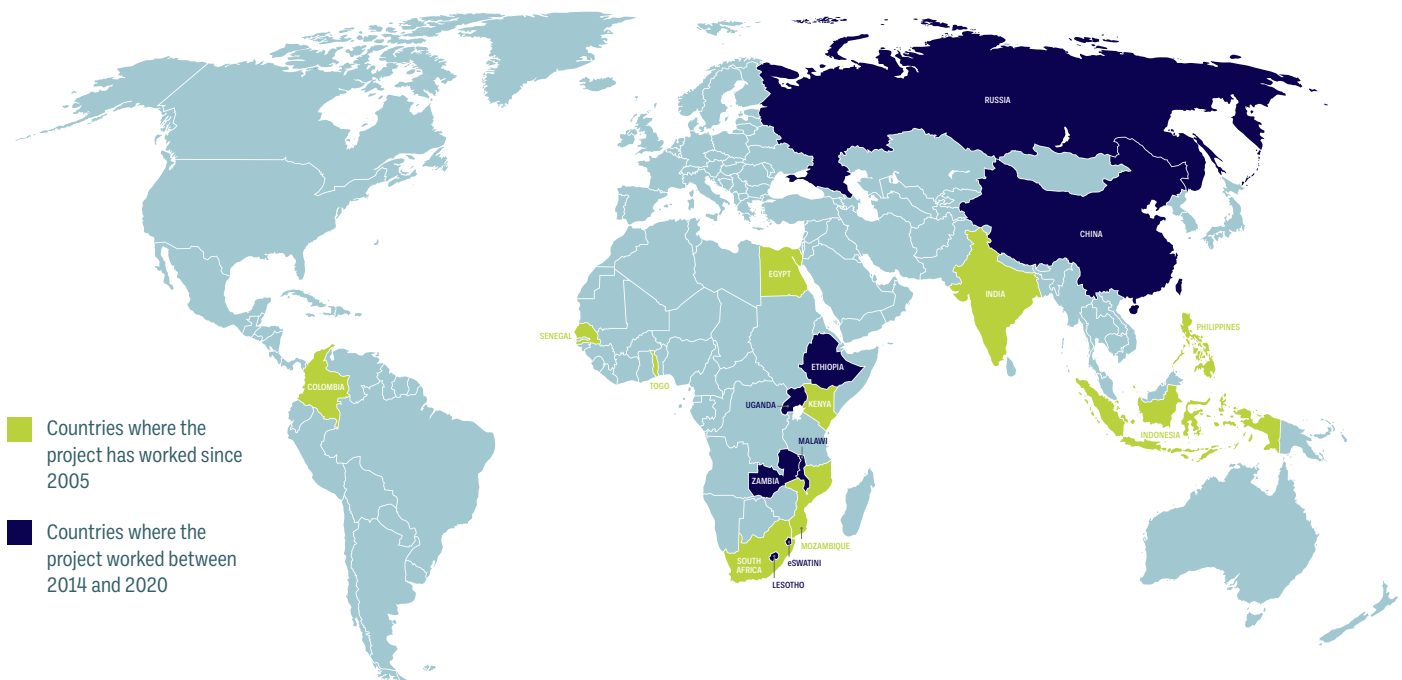
A HEALTHY WELL-INFORMED WORKFORCE

A critical part of the project was to ensure that the nurses involved remained healthy, well-informed and protected from TB. To care for others, nurses need to be trained in a way that takes account of their working environment, and they need to be properly recognised by the communities they live in for the vital contribution they make. It is also essential that they are involved in developing the plans and guidelines that they will ultimately put into practice.

Many nurses working in TB and DR-TB do not receive the training they need about what TB is, how it is transmitted and how it is diagnosed or treated. And many do not know the side-effects of medications, or how to protect themselves from becoming infected, all of which directly impact patient outcomes. It is imperative to ensure that frontline nurses working in TB/DR-TB have the knowledge and tools they need to identify, diagnose and successfully treat patients by providing quality patient-centred care, and this is the knowledge gap that the ICN project addressed.

A GLOBAL PROJECT

The ICN TB/MDR-TB project has worked with ICN member National Nurses Associations in 18 countries and between 2014 and 2020 continued its work in China, the Russian Federation, eSwatini, Ethiopia, Lesotho, Malawi, Uganda and Zambia.





Dr Jiang Guanglu explaining sputum sample quality and rejection criteria to nurses (Beijing, China 2018)

## I have seen the enemy now.

NYEMBEZI CHINKHOMBE

ICN TB Project Leading Light (Blantyre, Malawi – National Organisation of Nurses and midwives of Malawi 2015)

## NURSES VISITS TO LABORATORIES

During the training, nurses visited TB laboratories to learn about TB diagnostics, which was an invaluable experience for them to meet laboratory staff and learn the process the sputum samples go through.

For most nurses this was the first time they had visited a laboratory and seen TB mycobacteria under a microscope and what TB culture looks like. This experience helped them to understand how to collect sputum samples, in terms of their quantity and quality, and how to transport the samples to the lab and complete lab request forms etc.

Most importantly, the visits improved communication between the nurses and the laboratory staff, reducing delays in diagnosis and improving the care of the patient.

## ICN LEADING LIGHTS

In 2014, the ICN TB/MDR-TB project started the Leading Lights initiative to showcase the work of exceptional nurses who had been trained by the project and who were making outstanding contributions to TB prevention, care and

management in their local facility and/or community.

Since 2014, we have conferred the title of Leading Light on 67 nurses from ten countries — China, eSwatini, Ethiopia, India, Lesotho, Malawi, Russia, South Africa, Uganda and Zambia.



Leading Light Awardees 2014 - 2019



## OUTCOMES OF THE PROJECT

Nurses who have completed the project's training had worked as a nurse for 15.7 years and worked in TB care for 8.5 years on average. The majority of participants were female with an average age of 39 years. Since 2014, 445 nurses from nine countries have completed a test of their knowledge and attitudes before and after they attended the project. Just over half the nurses who completed the tests (52%) had received any training on TB in the 12 months prior attending the project (Table 1).

TABLE 1. **CHARACTERISTICS OF NURSES TRAINED FROM 2014 - 2019**

N (%) N=445

<b>Age*</b> <b>39</b> (9%) (Range 21 - 64)	<b>Sex</b> <b>Female: 321</b> (82%)	<b>Country</b>
		Uganda <b>28</b> (6%)
		Malawi <b>30</b> (7%)
		Zambia <b>30</b> (7%)
		Swaziland (eSwatini) <b>31</b> (7%)
		South Africa <b>34</b> (8%)
		Russia <b>44</b> (10%)
		Lesotho <b>44</b> (10%)
		Ethiopia <b>52</b> (12%)
		China <b>152</b> (34%)
<b>Years working as a nurse*</b> <b>15.7</b> (9%)	<b>Years working in TB*</b> <b>8.5</b> (8.2%)	
<b>Received training in previous 12 months on TB</b> <b>229</b> (52%) (n=441)		

\*Mean in years

There was a significant improvement in knowledge between the pre- and post-test scores. The mean correct score on the pre-test was 66% (range 30%-96%) and the mean correct score on the post-test was 90% (range from 43%-100%). Universally, nurses tended to score low on the pre-test to questions regarding risk factors for TB, signs and symptoms of TB, tests and methods used to diagnose TB, how drug resistance develops and TB in childhood.

Results of pre/post-tests indicate there was a large gap in nurses' knowledge of TB/MDR-TB prior to them taking part in the project's training.

After, nurses' knowledge and attitudes towards patients significantly improved.

Training nurses working on the frontlines of TB care is critical if the WHO End TB Strategy is to be successful and further transmission of TB is to be prevented.



## ADVOCACY WORK FOR NURSES WORKING IN TB

Unfortunately, nurses who work with people who have TB are subject to stigma and poor attitudes from some members of their communities, and even from other nurses. In some instances, matrons have allocated nurses to work in the TB ward as a form of punishment, and some have sent new nurses to TB areas to ‘prove themselves’ before being allocated elsewhere.

Another issue is that since TB is contagious and airborne, and as there are poor infection control measures/practices in many settings, nurses fear for their personal safety. Also, while it is not well documented, if nurses are afraid to work with TB patients or feel stigmatised by their hospital or facility management, patient care can suffer. Nurses in China and elsewhere reported that they do not tell their family or friends that they work with patients with TB as they are afraid their families will shun them.

To combat this, the ICN TB/MDR-TB Project focused on stigma towards patients and its causes during the training, and on nurses’ attitudes towards TB. Nurse participants often express concern for their own safety, so we

provided training on infection prevention and control, and focused on changes the nurses could make to improve infection control in their place of work.

Many nurses reported that they had made changes to the infection control in their settings following the training, which made them feel safer and more comfortable. When they felt more comfortable, they provided better care for patients.

Many of the nurses said they loved working in TB and are able to care for very ill patients and watch their condition drastically improve before their eyes. To address this, we set up a photo campaign with pictures of nurses holding signs that read “I am a TB nurse and I love my job”. The campaign attracted pictures from nurses working in TB from around the world showing their love for what they do. We have made posters and other promotional materials using these photos and they bring a smile to everyone’s faces.



Nurses in Harbin, China





I learned more deeply about nursing of the tuberculosis, and I recognise the weakness of nursing in our hospital. When I'm back, I'm going to train the nurses and supervise the work, to provide better nursing service for the patients.

WU ZHIJUAN, CHINA

CHANGES MADE TO

INFECTION CONTROL

81%

report making improvements in ventilation

63%

report now screening all patients for TB

73%

report improved safety in sputum collection

72%

report separating coughing patients

73%

report separating smear-positive and smear-negative patients

67%

report now providing surgical masks to patients

54%

report that N95 respirators are now available for healthcare workers, an improvement, but still an unacceptably small proportion

WHAT THE PROJECT ACHIEVED

An important characteristic of the ICN TB/MDR-TB project training is that it did not just offer a once-off workshop and then go away. At the end of each training workshop, every participant was expected to develop a workplan for how they would share the information they had gained through the training and leave it with the person at the local National Nursing Association who focuses on TB. That person provided support and follow up with the nurses trained, and the nurses were expected to report back to them six months after they completed the training.

In addition, the project returned to the countries one year after the initial training, bringing the nurses back together to find out how they had used the training and knowledge gained. They also discussed any changes they had made to their practice, how many other people they had trained, what their achievements had been and any challenges they had faced.

Reconvening in this way provided a wonderful opportunity to get feedback from the nurses, and for the participants to share and discuss their achievements and the challenges they had faced. These review meetings were also useful in helping to motivate the nurses and encourage them to continue sharing their experiences about improving care.

At the review meetings the participants were informed about the latest clinical information on the care of people with TB and the latest global updates. In addition, supervisory visits were made by the National Nursing Association, which the nurses appreciated because it showed that the training was being taken seriously and that there was an expectation that clinical practice would have changed. The nurses were also asked to complete a comprehensive evaluation survey about the changes they had made to their practice since the initial training.



Nurses during a ToT workshop in eSwatini

## MAIN EFFECTS OF THE PROJECT

- Increased confidence among the nurses who completed the training
- Improved nurse leadership
- Enhanced knowledge about TB/MDR-TB with a 24% increase on post-test
- Decrease in stigma towards patients
- National Forums on TB nursing care have been held in China and Russia since 2013
- Russian Nurses Association established the Russian TB Nurse Network in 2012
- Sub-specialty group of TB Nursing established in China in 2014
- Impact on patient care
- Improved psychosocial support to patients
- Improved education of patients and family members
- Improvements made to infection control

## RESEARCH TRAINING FOR NURSES

- Nearly 70 TB nurses from Russia, China, Ethiopia, eSwatini, Lesotho, Malawi, South Africa, Uganda and Zambia have been trained in research design and methods
- Chinese nurses published more than 50 articles in Chinese journals between 2015-2019
- Nurses from the seven African nations were invited back one year later to follow up on their progress and to provide further assistance to help them move their research projects forward
- Nurses have presented their research at national and international TB conferences, with 19 abstracts accepted for the Union's World Conference on Lung Health between 2015 and 2018



**LEFT** Elena Khasanova (Russian Nurses Association) presenting a poster at the Union World Conference on Lung Health, Liverpool, UK 2016



**MIDDLE** Nurses from the Zambia Union of Nurses Organisation during a ToT workshop in Lusaka, Zambia



**RIGHT** Nurse presenting on a group exercise during training workshop in Taiyuan, China

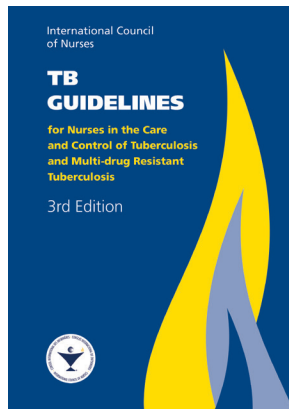
## SPONSORSHIP FOR NURSES TO ATTEND INTERNATIONAL CONFERENCES

The ICN TB/MDR-TB Project was proud to have sponsored so many nurses to enable them to attend and present papers at the annual Union World Conference on Lung Health for many years. The Project also sponsored nurses to attend ICN Congresses.



## RESOURCES AND MATERIALS DEVELOPED

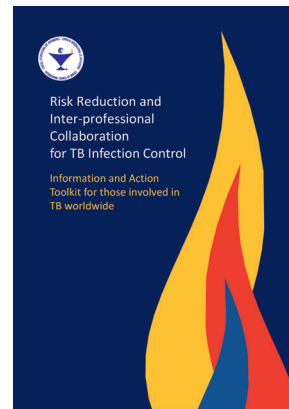
The ICN TB/MDR-TB Project developed numerous materials over the life of the project that have been used in the Training for Transformation training, and distributed to many nurses in the project countries and globally.



*TB guidelines for nurses in the care and control of tuberculosis and multidrug-resistant tuberculosis: 3rd Edition (2016)*

AVAILABLE IN THE FOLLOWING LANGUAGES:

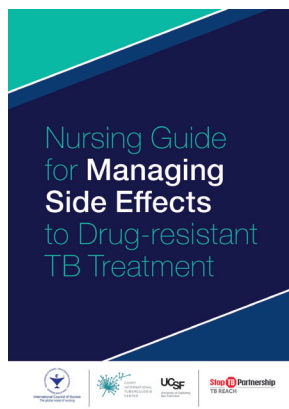
- English
- Chinese
- Russian



*Risk Reduction and Inter-professional Collaboration for TB Infection Control: Information and Action Toolkit for those involved in TB worldwide*

AVAILABLE IN THE FOLLOWING LANGUAGES:

- English
- Chinese
- Russian

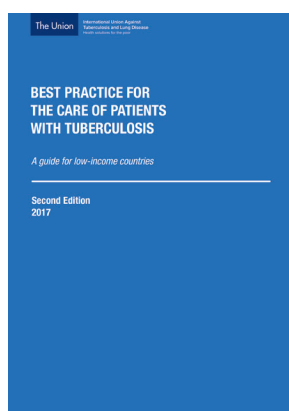


*Nursing Guide for Managing Side Effects to Drug-resistant TB Treatment (2018)*

The TB/MDR-TB Project was funded by the Lilly Foundation for the initial development and by TB REACH (Stop TB Partnership) to further development, printing, translation and distribution of a nursing job aid on the management of drug-resistant TB side effects. TB REACH further supported the development of a mobile app of this guide now available on Google Play and the Apple App store.

AVAILABLE IN THE FOLLOWING LANGUAGES:

- English
- Chinese
- Russian
- French
- Spanish
- Portuguese
- Bahasa Indonesia



The TB/MDR-TB Project collaborated with the International Union Against TB and Lung Disease to update the 2007 *Best practices for the care of patients with tuberculosis: A guide for low-income countries*, and released the 2nd edition in 2017. This important document is used in all ICN Training for Transformation workshops as an exercise for nurses to compare their current practice with established standards of care for different aspects of TB care. Nurses identify the gaps in their practice and develop plans to address these gaps in their workplace. Many nurses report that going through this exercise is the first time that they have been empowered to think through and develop plans to improve the standards of care in their settings.

AVAILABLE IN THE FOLLOWING LANGUAGES:

- English
- Chinese
- Russian
- French



One of the ICN tools which taught me to think out of the box was the Best Practice Tool, in that I learned to identify gaps in standards and so am constantly able to identify ways in which to improve patients TB care, and improve infection control practices.

JOJO MOYO, ZAMBIA





FUNDING:

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