



**World Health
Organization**

REGIONAL OFFICE FOR **Europe**

**By: Piret Viiklepp
Pierpaolo de Colombani
Aljona Kurbatova
Andreas Sandgren
Knut Lonroth**

Collaborative action on tuberculosis and alcohol abuse in Estonia

**First report of
a demonstration project**



**World Health
Organization**

REGIONAL OFFICE FOR **Europe**

Collaborative action on tuberculosis and alcohol abuse in Estonia

First report of a demonstration project

**By: Piret Viiklepp
Pierpaolo de Colombani
Aljona Kurbatova
Andreas Sandgren
Knut Lonroth**

ABSTRACT

Estonia has the highest per capita alcohol consumption in Europe. Alcohol consumption and its associated alcohol use disorders are seen as major obstacles to increasing the treatment success achieved under the National Tuberculosis Programme. The National Institute for Health Development, the World Health Organization and the European Centre for Disease Prevention and Control worked jointly on a demonstration project aiming to improve treatment compliance and outcomes of tuberculosis and multidrug resistant tuberculosis patients through collaborative tuberculosis, mental health and social services. A specific conceptual framework was developed for this collaboration.

Some achievements of the demonstration project included: implementing necessary guidelines and tools; providing specific training to staff; introducing routine alcohol use disorder treatment for tuberculosis patients; and consideration of project interventions in the current draft of the National Alcohol Policy Green Paper, along with reimbursement of alcohol use disorder-related services. However, some of the project's objectives were not achieved: staff shortages and lack of financial incentives hindered collaboration within mental health services; alcohol use disorder screening was not routinely offered to all tuberculosis patients; and the short project time frame and low number of enrolled patients limited the evaluation of the impact of interventions on treatment outcomes. Nevertheless, the available evaluation data are encouraging.

Acknowledgments

The authors would like to acknowledge the Eli Lilly and Company Foundation for the financial support given to this project. They are also grateful to Dr Maris Jesse, Director of the National Health Institute for Health Development, for the collaboration and support provided by the Institute.

Keywords

Alcohol abuse
Mental health
National health programs
Social service
Tuberculosis
Tuberculosis, multi-drug resistant

Address requests about publications of the WHO Regional Office for Europe to:

Publications
WHO Regional Office for Europe
UN City, Marmorvej 51
DK-2100 Copenhagen Ø, Denmark

Alternatively, complete an online request form for documentation, health information, or for permission to quote or translate, on the Regional Office web site (<http://www.euro.who.int/pubrequest>).

© World Health Organization 2013

All rights reserved. The Regional Office for Europe of the World Health Organization welcomes requests for permission to reproduce or translate its publications, in part or in full.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either express or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use. The views expressed by authors, editors, or expert groups do not necessarily represent the decisions or the stated policy of the World Health Organization.

Contents

Lists of authors and contributors.....	iv
Lists of illustrations	v
Acronyms and abbreviations	vi
1. Background.....	1
2. How services are organized in Estonia	2
2.1. General health services.....	2
2.2. NTP	3
2.3. Mental health services	4
2.4. Social services	4
3. Conceptual framework	6
3.1. TB and MDR-TB services	6
3.2. AUD services.....	7
3.3. Social services	7
3.4. Coordination	7
3.5. Monitoring and evaluation	8
4. Interventions implemented	9
4.1. TB and MDR-TB services	9
4.2. AUD services.....	9
4.3. Social services	10
4.4. Coordination	11
4.5. Monitoring and evaluation	11
5. Results.....	12
6. Lessons learnt and future steps.....	16
References	18
Annex 1 Project activities.....	20
Annex 2 AUDIT	22

Lists of authors and contributors

Authors

Piret Viiklepp, National Institute for Health Development, Tallinn, Estonia

Pierpaolo de Colombani, Tuberculosis and multidrug- and extensively drug-resistant tuberculosis, WHO Regional Office for Europe, Copenhagen, Denmark

Aljona Kurbatova, National Institute for Health Development, Tallinn, Estonia

Andreas Sandgren, European Centre for Diseases Prevention and Control, Stockholm, Sweden

Knut Lonnroth, Stop TB Department, WHO, Geneva, Switzerland

Contributors

Anu Kurve, North Estonian Medical Centre, Tallinn, Estonia

Manfred Danilovits, Faculty of Medicine, University of Tartu, Tartu, Estonia

Andres Lehtmets, Estonian Psychiatric Association, Tallinn, Estonia

Lists of illustrations

Tables

Table 1. TB treatment outcomes among drug-susceptible patients by grade and treatment of AUD, January to June 2012

Figures

Fig. 1. Management of patients with drug-susceptible TB

Fig. 2. Management of patients with MDR-TB

Acronyms and abbreviations

AA	Alcoholics Anonymous
AIDS	acquired immune deficiency syndrome
AUD	alcohol use disorders
AUDIT	alcohol use disorders identification test
DOT	directly observed treatment
ECDC	European Centre for Disease Prevention and Control
EHIF	Estonian Health Insurance Fund
GP	general practitioner
HIV	human immunodeficiency virus
ICD	International Classification of Diseases
MDR	multidrug resistant
NEMC	North Estonia Medical Centre
NIHD	National Institute for Health Development
NTP	National Tuberculosis Programme
PHC	primary health care
SCC	smoking cessation consultation
TB	tuberculosis

1. Background

The most recent World Health Organization (WHO) estimates indicate tuberculosis (TB) incidence, prevalence and mortality in Estonia in 2011 to be at, respectively, 25 cases (95% CI: 22–28), 29 cases (95% CI: 12–3) and 2.7 (95% CI: 2.6–2.7) deaths per 100 000 population (1). Multidrug-resistant (MDR) TB is estimated to be 23% (95% CI: 17–29%) among the newly diagnosed and 58% (95% CI: 43–71%) among the previously treated TB cases, which are among the highest proportions in the world (2). In 2011, 92% of all TB patients were tested for HIV and 15% of them were found to be HIV-positive (1). On the more positive side, a significant and consistent downtrend in the notification rates of TB and MDR-TB has been observed in recent years, confirming Estonia's path towards the targets of low TB incidence and decreasing proportion of MDR-TB.

Estonia has the highest per capita alcohol consumption in Europe (15.6 litres of pure alcohol per capita consumption in 2005) (3). The strong links between alcohol consumption and risk of TB and poor TB treatment outcomes are well documented in the relevant literature (4, 5). Alcohol consumption and its associated alcohol use disorders (AUDs) are also seen as major obstacles to increasing further the treatment success achieved under the National Tuberculosis Programme (NTP). In 2010, the NTP reported only 68% treatment success among the new (smear-positive pulmonary) TB patients; 39% among the patients retreated for TB and 35% among the MDR-TB patients (1). Past research carried out in Estonia has shown that defaulting from TB treatment was strongly associated with alcohol abuse (6). Alcohol abuse¹ was found in 43% of the new (smear-positive pulmonary) TB patients, 61% of the TB patients under retreatment, 54% of the MDR-TB patients and 77% of those defaulting from MDR-TB treatment. The adjusted relative risk for defaulting from TB treatment among MDR-TB cases was 3.8 among those patients with alcohol abuse problems, compared with those without.

In March 2010, the National Institute for Health Development (NIHD) introduced for the first time the Alcohol Use Disorders Identification Test (AUDIT) (7) through a pilot project funded by the European Social Fund and conducted in six primary health care (PHC) centres. This intervention – along with the documented evidence of the negative influence of alcohol abuse on TB – convinced the NTP colleagues to request the support of WHO during a meeting on TB and social determinants held in Athens in May (8). WHO and the European Centre for Disease prevention and Control (ECDC) jointly conducted a country visit in August 2010, with specific focus on TB prevention and control among vulnerable populations, in particular people with AUDs (9). The country visit was an instrumental catalyst in securing the commitment and funding of WHO (with earmarked funds from Eli Lilly and Company Foundation), the ECDC and the NIHD around a demonstration project aiming to improve TB and MDR-TB treatment compliance and outcome through collaborative TB and mental health services (responsible in Estonia for AUD diagnosis and treatment). Collaboration with social services was also considered to be essential in addressing the socioeconomic determinants of poor TB treatment compliance and outcome, as well as ensuring access for patients to existing social protection schemes.

¹ Alcohol abuse defined as registered alcoholism or weekly consumption of alcohol of at least 14 standard drinks (one drink corresponding approximately to 10 g absolute alcohol) for men and at least seven standard drinks for women, in the last year.

2. How services are organized in Estonia

2.1. General health services

The Ministry of Social Affairs is responsible for health services in Estonia, excluding those in the penitentiary system and the military system; these are the responsibility of the Ministry of Justice and the Ministry of Defence, respectively.

The Ministry of Social Affairs has three subordinate agencies working on health: the Health Board, the State Agency of Medicines, and the NIHD. The Health Board provides coordination and advice in the fields of health care, health protection, and safety of chemicals. The State Agency of Medicines supervises the use of medicines and biological products in Estonia, along with the development of pharmaceutical research and entrepreneurship. The NIHD coordinates research for evidence-based public health policies, maintains the national medical databases,² and implements national health programmes, such as those for HIV, drug addiction and alcohol abuse, TB treatment and prevention, cardiovascular disease prevention, cancer prevention and so on. An independent public body (the Estonian Health Insurance Fund (EHIF)) is in charge of purchasing health services for the Ministry of Social Affairs; specifically, it legally contracts with health services providers, pays for their services, reimburses pharmaceutical expenditure and funds employees' sick leave.

The Health Services Organization Act (May 2001) defines four types of health care: PHC provided by family doctors; emergency care; specialized (secondary and tertiary) care; and nursing care. The Ministry of Social Affairs develops all standards, including for public financing (10). However, services are independently purchased by the EHIF, either from individuals or institutions, only when they are operating as private legal entities, such as a limited liability company, a foundation or a private entrepreneur. In response, hospitals have become limited liability companies owned by local governments, or foundations established either by the State or by the local governments. Most outpatient health facilities are private, with doctors and nurses operating as private entrepreneurs or employees of a private company; these facilities are restricted to providing only primary and nursing care services. The only state outpatient services are those run by the county governors or directly by the Ministry of Social Affairs to ensure complete coverage and access.

Since the start of the health care reform in the early 1990s, many hospitals were merged or turned into nursing homes and primary care centres. At present, there are three regional hospitals: the Tartu University Hospital (offering all specialized services for the southern part of the country), the North Estonian Regional Hospital in Tallinn (offering only some specialized services, while others are provided by two central hospitals) and the Tallinn Paediatric Hospital (covering the North and West regions of Estonia, while South Estonia is covered by the Tartu University Paediatric Clinic). There are also four central hospitals, mainly providing secondary health care, of which two are located in Tallinn and the other two in the north-east and south-west of the country. General or local hospitals exist in almost every other remaining county. According to Estonia's Hospital Master Plan 2015, the number of hospitals should be reduced to only 19 acute care hospitals; that is, equivalent to two acute care hospital beds per 1000 population. The standards for staffing fixed by the Ministry of Social Affairs are three physicians and eight nurses per 1000 population (projected until 2020).

² Medical Birth Register, Cancer Register, Tuberculosis Register, Causes of Death Register.

2.2. NTP

The TB services in Estonia are provided by the Ministry of Social Affairs through the NTP, implementing the Stop TB Strategy along with the National Health Plan 2009–2020 (which also includes a plan for TB, updated in 2012). The overall objective of the plan is to decrease the incidence of TB in the country below the 2006 baseline level and possibly below the level of 20 new TB cases per 100 000 population (cut-off point for becoming a low-incidence country) by the year 2012. All TB services are free of charge, regardless of the legal and insurance status of the patients. The services are financed either through the EHIF (e.g. inpatient care), or directly by the State. The Ministry of Social Affairs arranges the central procurement of anti-TB drugs (including for patients in the penitentiary system), while allocating a budget to the NIHD for the other programme activities, such as central management, diagnostics, ancillary drugs, outpatient care, patient incentives and enablers (food packages and transport vouchers), supervision, recording and reporting, prevention and contact tracing.

TB services are provided through the North Estonian Medical Centre (NEMC) in Tallinn and Kose (covering the half million population of North Estonia) and the Tartu University Clinics (covering the population living in the South), along with other TB hospitals, of which there are six with a total of 230 beds:

- NEMC, Kose, TB Department (100 beds, including beds for MDR-TB);
- Viljandi Hospital Psychiatric Clinic at Jämejala, TB Department (30 beds, including a special ward for (involuntary) isolation of TB patients);
- Tartu University Hospital, Tartu, Lung Clinic (25 beds, of which nine for MDR-TB);
- Ida-Viru Central Hospital, Kohtla-Järve, TB Department (25 beds);
- Narva Hospital, Narva, TB Department (20 beds);
- Central Hospital of Prisons, Maardu, TB Department (30 beds).

Outpatients TB departments also exist in all 15 counties. In addition, five TB cabinets are in operation in Tallinn (three), Tartu (one) and Kohtla-Järve (one).

Diagnosis and referral of TB cases are integrated into PHC services. Respiratory patients can be seen directly by a pulmonologist or referred to one by a family doctor. All MDR-TB cases are discussed in a medical consilium.³ Most of the TB cases initiate their treatment in a specialized TB hospital. Their admission can range from one to two months or to many more, if they are severe or MDR-TB cases. Both clinical and social conditions of the patients are taken into consideration in deciding their length of hospital stay. After discharge, the patients continue their directly-observed treatment (DOT) daily at the TB cabinet, at county pulmonologist or outpatient departments, or at a PHC facility; for some patients, their anti-TB drugs are self-administered, only returning to the TB cabinet weekly for follow-up and to maintain their supply of medicines. Family doctors receive a financial incentive for each patient under a DOT scheme (300–500 Estonian Krooni, which is equivalent to €19–32 per month). If a patient interrupts or defaults from treatment, the family doctor responsible informs the TB cabinet, which attempts to retrieve the patient by phone or home visit.

Alcohol intake inside is prohibited inside any health facility, including TB hospitals. However, patients can easily obtain alcohol from outside and hospital rules are not applied too strictly, since such an approach would lead to patients discharging themselves from hospital. Alcohol intake is even more difficult to control after hospital discharge, and many patients default from their TB treatment. Before the demonstration project, there was no standard way to assess the harmful use of alcohol

³ Expert group comprised of specialists.

and/or AUD in Estonia's health facilities (with the exception of some psychiatric hospitals) and was no specific intervention strategy. TB clinicians repeatedly described their difficulties in managing patients with alcohol problems. By law, involuntary isolation (with voluntary TB treatment) is permitted, but only as an extreme option, to be enforced by a court order and limited to 182 days in a special ward of the Viljandi Hospital.

The Ministry of Social Affairs also ensures the provision of national HIV services through the National HIV Committee, implementing the National HIV and AIDS Strategy 2006–2015 (also incorporated into the National Health Plan 2009–2020). The NIHD ensure collaboration with the NTP. A number of nongovernmental organizations that were initially active only in the HIV field have also taken on a role in tackling TB/HIV co-infection; in addition, steps towards collaborative action were taken to ensure opioid substitution treatment is accessible to TB patients.

2.3. Mental health services

Mental health services provide diagnosis and treatment of mental disorders under the Psychiatric Aid Act (12 February 1997). Forensic psychiatry and prison psychiatry are financed by Ministry of Justice. Drug addiction therapy is funded by Ministry of Social Affairs based on National Health Plan 2009–2020; the Ministry of Social Affairs allocates the funds to the NIHD, which then contracts the providers. In principle, diagnosis and treatment of AUDs should also be provided by the mental health services sector. In practice, however, AUD diagnosis and treatment are excluded from such funding because the costs for these are not reimbursed by the EHIF and this group of patients competes with the high workload of a very limited network of psychiatrists and psychologists and the widespread cultural, societal acceptance of high levels of alcohol consumption. Moreover, TB and MDR-TB conditions are associated with social marginalization and stigma. Only in Viljandi Hospital – where there is a TB Department integrated within the Psychiatric Clinic – can AUD treatment can be arranged. No up-to-date national guidelines exist on diagnosis and treatment of AUDs in Estonia.

2.4. Social services

Local governments (municipality, city, city district) are responsible for organizing social services. All permanent residents in Estonia, as well as all expatriates and refugees living in the country legally⁴ are entitled to receive these services. Through the Social Insurance Board (under the Ministry of Social Affairs), the State funds the services listed below.

- Disability allowance is provided for people of working age (aged 16 years to retirement age) with restrictions in daily activities and active social life. This allowance is paid monthly and is based on the degree of disability (severe, intermediate, moderate) and related additional expenses, which can be quantified within a range of 65–210% of the monthly social benefit (equivalent to €25.57 in 2012).
- Counselling is available, providing information to individuals on their rights (opportunities to seek help), along with assistance in resolving specific problems.
- Day centres exist, intended as places for recreation and assistance for elderly people.
- A personal rehabilitation plan is drawn up to facilitate independent living and employment, on the basis of which further services and mentorship are provided to the person in need.
- Nursing care and assistance are provided at home or in a social welfare institution.

⁴ Based on international legislation.

- A personal assistant can be allocated to care for disabled person, reducing the burden on family members.
- Substitute care is available for children whose family is not able to take care of them, such as guardianship, in a substitute home or care in another family.
- Home child care is provided to support parents who are working, studying or otherwise unable to cope.
- Social housing is available for individuals and families not capable of making their own housing arrangements.
- Transport is provided for various groups of people in need (in cases of physical impairment, visual impairment, mental disability, and so on).
- Prosthetic, orthopaedic and other appliances can be provided.
- Dwellings can be adapted for physically disabled people.

A municipality or city government may also provide other, supplementary social services.

Nurses and social workers of a TB facility can refer patients to the local government for social support after discharge from hospital;⁵ however, although both services come under the Ministry of Social Affairs, this collaboration is practised without any formal agreement between the two services. The evidence in Estonia speaks of a considerable need for social protection, given that only 25% of TB patients work on a regular basis, 6.1% are homeless, 6.1% only have occasional accommodation and 7% use illicit drugs (11).

⁵ At this point patients return to the services of their local municipality.

3. Conceptual framework

A workshop was held in Tallinn on 6–7 October 2011 (12) to share relevant experiences in Europe (specifically in Finland, Latvia, Lithuania, and the Russian Federation (13) and to shape the conceptual framework of collaboration between TB, mental health and social services, which was to be piloted in the demonstration project. Taking into account the expected workload and logistics, the project was designed to cover Tallinn city and Harjuma county, in which half of the annual new TB and MDR-TB cases of Estonia were occurring and it was to be implemented during the first half of 2012 (January to June).

The objectives of the project were:

1. to advocate for the epidemiological and programmatic links between TB (especially MDR-TB) and AUDs;
2. to establish coordination between TB/MDR-TB, mental health and social services to ensure diagnosis and treatment of AUDs, including screening for both conditions and ensuring cross-referral between services for appropriate clinical management and social support;
3. to pilot the collaboration framework and validate it for countrywide expansion.

The expected outcomes of the project were:

1. a sustainable framework of collaboration developed between TB/MDR-TB, mental health and social services;
2. successful implementation, monitoring and evaluation of the demonstration project;
3. the organization of a subregional workshop and conference, with the participation of the Baltic states, Finland and the Russian Federation;
4. increased awareness at the Ministry of Social Affairs of the dual problem of MDR-TB and AUDs, for consideration in developing a national action plan to reduce the harmful use of alcohol.

The framework adopted by the project considered:

1. the establishment and field testing of joint delivery of TB/MDR-TB, AUD-related (psychiatric) and social services aiming to improve TB and MDR-TB treatment compliance and outcomes;
2. the screening of TB and MDR-TB patients for AUDs and access to appropriate AUD treatment for those in need;
3. the screening of TB and MDR-TB patients for their socioeconomic conditions and appropriate support through social services;
4. the recording of TB and AUD diagnosis and treatment, the relevant social support for each patient, the monitoring of AUD prevalence, and the impact of AUD treatment and social support on TB treatment outcomes;
5. the evaluation of the demonstration project six months after its inception, as well as documentation of the findings.

Under this framework, new forms of collaboration between the different services were designed, as described in the sections that follow.

3.1. TB and MDR-TB services

Patients visiting their PHC doctor with suspected TB are referred to the NEMC TB Outpatient Department in Tallinn (in Hiiu city district) or to the NEMC TB Department in Kose (40 km from Tallinn) for TB diagnosis and inpatient treatment as necessary. The TB treatment can continue under the outpatient care of the NEMC Outpatient Department or two other TB cabinets (in Lasnamae and Kopli city districts), whereby TB nurses can ensure daily DOT at the relevant care facility or in

patients' homes. In cases of involuntary TB isolation and treatment, patients are sent to Viljandi Hospital, where there the Psychiatric Clinic has a TB Department.

3.2. AUD services

The existing AUDIT guidelines that were initially developed for PHC providers have been revised and both PHC and TB providers are trained on their implementation.

The AUDIT screening is either carried out by PHC providers or by TB nurses at the NEMC. Patients are referred to the Psychiatric Department of the NEMC in Tallinn for AUD diagnosis and treatment, on the basis of their AUDIT score.⁶ The psychiatrists and psychologists at the NEMC Psychiatric Department carry out weekly visits to the TB Department of the NEMC in Kose for inpatient evaluation and treatment of those with AUDs. Similar services are organized in the TB Department of the Viljandi Hospital Psychiatric Clinic.

After their discharge from the NEMC TB Department or from Viljandi Hospital, patients continue to receive AUD-specific motivational counselling from the NEMC's TB nurses, while AUD treatment is arranged by the Wismari Psychiatric Hospital Outpatient Department. The TB nurses are in charge of the management of each patient undergoing simultaneous TB/MDR-TB and AUD treatment and they are responsible for ensuring the care continuum.

To ensure AUD diagnosis and treatment for TB and MDR-TB patients, the NIHD contracts Wismari Psychiatric Hospital and Viljandi Psychiatric Clinic. Their services, including medications are paid for by the NIHD during the time frame of the project, but it has been proposed to the Ministry of Social Affairs to include these costs among those reimbursed by the EHIF.

3.3. Social services

All new TB and MDR-TB patients are screened to determine their socioeconomic status by a social worker at the beginning of their inpatient or outpatient treatment. Patients admitted to the TB Department in Kose are visited by the social worker twice a week. A new questionnaire has been developed for this initial screening process that can orient the social workers to initiate all necessary administrative steps for the patient to have access to the most appropriate entitlements according to local legislation (disability pension, subsistence allowance, nursing home care) and to ensure coordination with the social worker of the municipality in which the patient lives.

3.4. Coordination

A project coordinator has been appointed to ensure close coordination between all services provided by the NEMC. A social worker within the NEMC ensures coordination with the social services of the municipalities. TB nurses, together with social workers are responsible for patient management, including tracking patients that default from TB and AUD treatment and managing other outreach activities organized with social services.

⁶ An AUDIT score of 0–7 is followed up by the TB nurse, who informs the patient about the harmful effects of alcohol use; a score of 8–19 leads to a short period of counselling by a psychologist or a doctor and the patient is provided with self-help materials; a score of ≥ 20 results in a consultation with a psychiatrist and consideration is given to administering medicines such as naltrexone and disulfiram.

3.5. Monitoring and evaluation

For the monitoring and evaluation of the project, data relating to the services provided (AUD-related and social) are analysed according to TB and MDR-TB condition, treatment adherence and treatment outcome. Regular visits to oversee the project are carried out by the NIHD, WHO and the ECDC.

4. Interventions implemented

Under this framework, new forms of collaborations between the different services were initially designed and then later rearranged, during the implementation phase. A list of the project activities undertaken can be found in Annex 1.

4.1. TB and MDR-TB services

During the demonstration project, TB and MDR-TB services were provided as per the framework initially designed; that is, diagnosis and inpatient treatment at the NEMC TB Department in Kose and outpatient treatment in Tallinn at the NEMC Outpatient Department (Hiiu city district) and two TB cabinets (in Lasnamae and Kopli city districts).

4.2. AUD services

The existing AUDIT guidelines were expanded to include orientation on TB and social determinants of TB and AUD treatment (14, 15). They were supplemented by an AUDIT tool (see Annex 2). In addition to the guidelines, information leaflets were also produced (in Estonian and Russian) to educate the patients. An existing Estonian translation of a textbook (16, 17) on AUD motivational counselling was reprinted. TB providers nationwide were trained on AUDIT screening and AUD motivational counselling through a series of training courses.⁷

To ensure a standardized and updated approach to AUD counselling and treatment, the NIHD organized a study visit to Finland for a group of experts.⁸ Two meetings of the National Working Group on AUD Counselling and Treatment were organized,⁹ with the participation of experts from 15 different institutions, including the Ministry of Social Affairs, the Ministry of Justice, the EHIF, the NIHD, the Estonian Union of Psychiatrists and the Estonian Union of Family Doctors, among others. As an outcome of these meetings, a protocol on AUD counselling and treatment was finalized for implementation and for possible inclusion into the National Alcohol Policy Green Paper being prepared by the Ministry of Social Affairs. A national workshop on the AUD counselling and treatment protocol was organized by the NIHD.¹⁰

In contrast to what was initially planned, not all patients were screened using AUDIT, but rather only a selection of them based on the decisions made by the treating physicians (see the following chapter on results for further explanation). For those patients screened, different interventions were undertaken based on their AUDIT score and according to the agreed implementation framework.

Psychiatric services for both inpatient and outpatient AUD treatment were also rearranged. Inpatient psychiatric services were planned to be contracted from the Psychiatric Clinic of the NEMC, but this was impossible due to the lack of psychiatrists and – more generally – lack of interest. Despite efforts to do so, the NIHD was unable to find an alternative partner, so the NEMC decided to employ within the NEMC TB Department an additional doctor with psychiatric education, able to coordinate the AUDIT screening and AUD motivational counselling. In cases in which patients have

⁷ Five training courses were organized in Tallinn on 23 and 29 November 2011, 27 March 2012, and 10 and 20 April 2012.

⁸ A group comprising 10 participants from different regions and organizations in Estonia visited several Finnish clinics (including Järvenpää Clinic and South Espoo A-Clinic) across two days (30 November to 2 December 2011).

⁹ These coordination meetings took place in Tallinn on 3 February and 9 March 2012.

¹⁰ “Workshop on treatment of AUD for psychiatrists”, which took place in Viljandi Hospital on 23 March 2012.

high AUDIT scores, evident AUDs and/or drug abuse, they should be referred to Viljandi Hospital to continue their TB treatment with proper psychiatric and psychological assistance. The outpatient AUD services were planned to be contracted from the Wismari Psychiatric Hospital. However, due to the low number of patients and the estimated low income generated from providing these services, the Wismari Psychiatric Hospital declined the contract offered by the NIHD. Consequently, after their discharge from Kose and Viljandi hospitals, patients had to continue receiving motivational counselling from the NEMC TB nurses in Tallinn and Harjumaa, and all AUD medication, if started, had to be discontinued. Additional transportation costs for the patients were covered as part of the TB treatment.

Alongside contributing to the draft of the National Alcohol Policy Green Paper, the project also tried to create the conditions for its future sustainability by undertaking negotiations with the EHIF in order to ensure the AUD services provided to TB patients were included among the costs reimbursable by the EHIF. A specific request was prepared jointly by the NIHD, the Estonian Respiratory Society and the Estonian Psychiatric Association and was submitted to the EHIF.

Unfortunately, the EHIF rejected the request. New negotiations started in 2013 and, as they were now supported by the Ministry of Social Affairs, in December 2013 approval was received.

Starting from 1 January 2014, the EHIF is to take over the reimbursement of stationary care of patients with dual diagnosis (TB and addiction disorders), provided that the health care institution providing treatment has a treatment team (including a number of psychiatrists, psychologists, occupational therapists and social workers) in addition to the currently required team of a pulmonologist, nurse and carer, which means that in addition to bed-days, the EHIF will also reimburse services related to the curing addiction disorders (both AUD and drug addiction disorders).

4.3. Social services

A questionnaire was developed by the social workers at the NEMC, West-Tallinn Central Hospital and the NIHD to evaluate the socioeconomic status of TB and MDR-TB patients and their support needs. Having been tested in two hospitals (the NEMC and East-Viru Central Hospital), the questionnaire was distributed to all TB services. Based on the total score from the questionnaire, patients were assigned to one of the following three groups of social risk: (1) low risk (score <7), with adequate self-care ability, capacity to address social problems independently, appropriately cooperative, receiving support from family/friends/carers, receiving regular income; (2) intermediate risk (score 8–19), with partial self-care ability, needing help in various spheres of life, able to identify problems but not solutions, cooperating passively; (3) high risk (score >20), with limited self-care, needing help in all spheres of life.

A course¹¹ was organized to train social workers from Tallinn City and Harjumaa County on TB and to discuss the collaboration between TB and social services.

As part of the psychological support to patients, their need to cope with a long period of hospitalization segregating them from any social context also needed to be taken into consideration. Consequently, a computer with a wireless Internet connection was installed in each of the wards of the NEMC TB Hospital in Kose. Board games were also made available to the patients, despite the old-fashioned (but prevailing) rule of surface disinfection carried out in hospitals.

¹¹ This took place on 6 March 2012 in Tallinn.

4.4. Coordination

One of the TB doctors of the NEMC Ambulatory Department was appointed as project coordinator to ensure coordination between all services. Social workers from the NEMC Ambulatory Department worked effectively with all DOT nurses and social workers from municipalities to ensure the continuation of TB treatment in outpatient regimens, the tracking of TB treatment defaulters, delivery of AUD motivational counselling and effective links with social workers from the municipalities.

4.5. Monitoring and evaluation

A simple Microsoft Excel spreadsheet was developed to ensure that the information relating to each TB and MDR-TB patient was merged from the three different sources; namely, the National TB Register (electronic), the AUDIT recording (manual) process and various social services-based interventions (manual).

5. Results

Sixty-five patients with TB were registered for TB treatment during the project time frame (January to June 2012). Of these patients, 51 presented with drug-susceptible TB (47 new TB cases and 4 relapses) and 14 with MDR-TB (11 new cases, 2 relapses, 1 resuming treatment after defaulting).

Of the 51 patients with drug-susceptible TB (see Fig. 1), 21 were not screened using AUDIT because the treating physicians excluded any problem of alcoholism and considered it inappropriate to follow the given protocol. 22 patients were screened using AUDIT and 17 of them registered an AUDIT score exceeding 8 points (3 patients with 8–19 points and 14 patients with ≥ 20 points). A total of 15 of these patients received a short period of alcohol counselling at the TB Hospital in Kose and two patients had a consultation with a psychiatrist and AUD treatment with involuntary isolation in Viljandi Hospital. Eight patients were found with history of alcohol and/or drug abuse but refused the AUDIT; 2 of these patients started treatment outside hospital and six at the TB Hospital in Kose, where they received a short period of alcohol counselling. Counselling and psychiatric assistance had to be stopped for all patients after discharge from hospital and only motivational counselling was provided by the DOT nurses.

Of the 14 patients with MDR-TB (see Fig. 2), 3 were not screened with AUDIT because the treating physicians excluded any problem of alcoholism and considered it inappropriate to follow the given protocol. 11 patients were screened with AUDIT and 10 registered an AUDIT score exceeding 8 points (three patients with 8–19 points and seven patients with ≥ 20 points); of these patients, seven received a short period of alcohol counselling at the TB Hospital in Kose and three of those had a consultation with a psychiatrist and AUD treatment with involuntary isolation in Viljandi Hospital. With the exception of two patients who defaulted, all the others are still undergoing treatment in hospital.

In terms of social support, only 28 (43%) of the total 65 patients registered for TB treatment during the project were considered in need of social assistance and formally screened to determine their social status by a social worker visiting the TB facility. Six of them registered as “high social risk”, 19 as “intermediate social risk” and three as “low risk”. As consequence of these results, 25 patients received formal counselling by a social worker at the TB facility, of which seven patients were granted a disability allowance.

At present, the TB treatment outcomes achieved within the framework of the project can be evaluated only for those 51 patients registered for treatment of drug-susceptible TB (see Table 1). Of the 14 patients placed under MDR-TB treatment during the project, 12 are still undergoing treatment and two patients have defaulted.

Table 1. TB treatment outcomes among drug-susceptible patients by grade and treatment of AUD, January to June 2013

AUDIT	Patients registered for TB treatment (n)				Cure rate (%)
	Total	Cured	Defaulted	Died	
Subtotal without alcohol abuse	26	23	1	2	88%
With AUDIT score <8	5	4	1	0	80%
Without AUDIT, alcohol abuse excluded	21	19	0	2	90%
Subtotal with alcohol abuse	25	17	5	3	68%
With AUDIT score 8–19	3	3	0	0	100%
With AUDIT score ≥20	14	10	1	2	71%
Without AUDIT, alcohol abuse considered	8	4	3	1	50%
Grand total	51	40	6	5	78%

Among the 26 patients without alcohol problems (as considered by the treating physician or with an AUDIT score of less than 8 points), 23 (88%) patients were cured, two patients died and one patient defaulted (treatment restarted after an interruption period of longer than two months). Among the 25 patients with alcohol problems (as considered by the treating physician or with an AUDIT score of 8 points or more), 17 patients (68%) were cured, two died, five defaulted (four restarted treatment after an interruption period of longer than two months).

Fig. 1. Management of patients with drug-susceptible TB

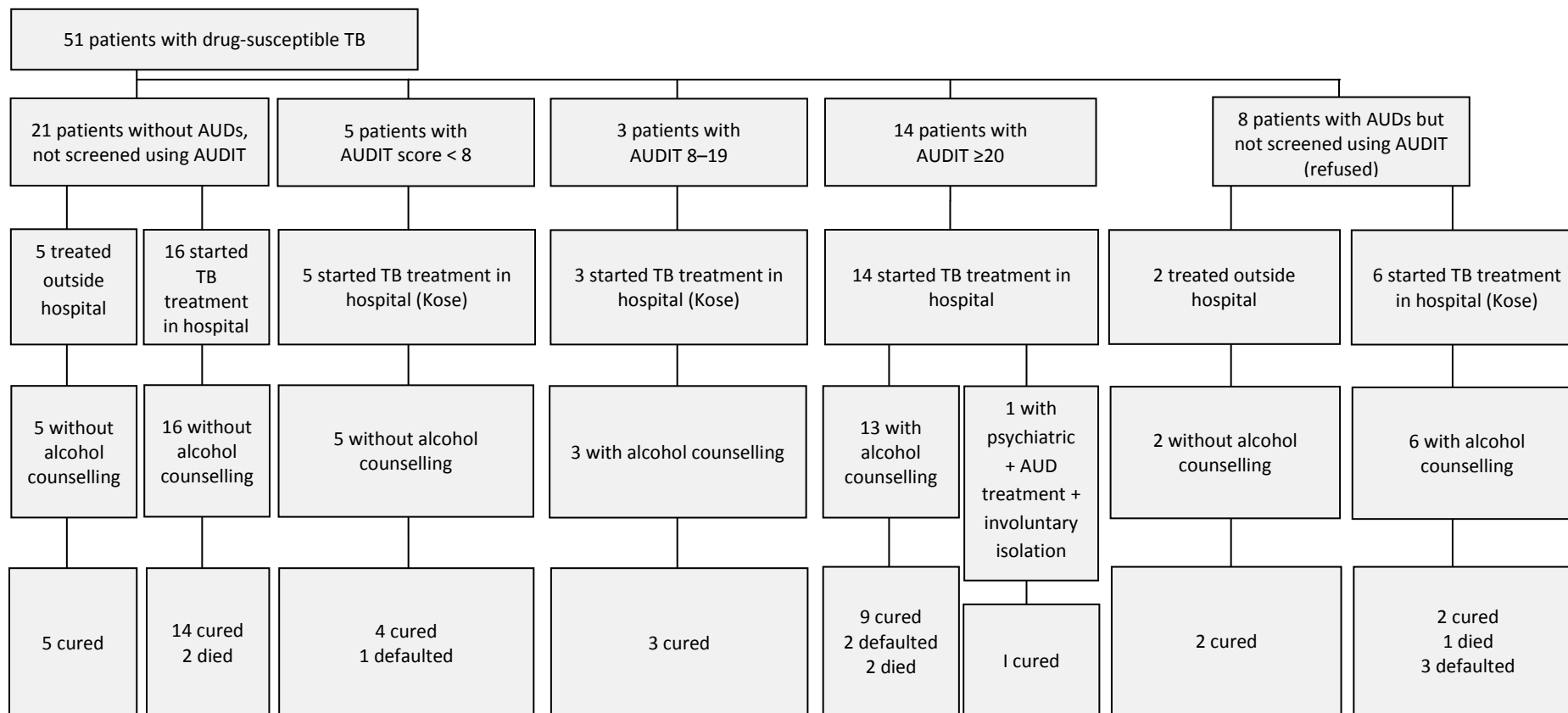
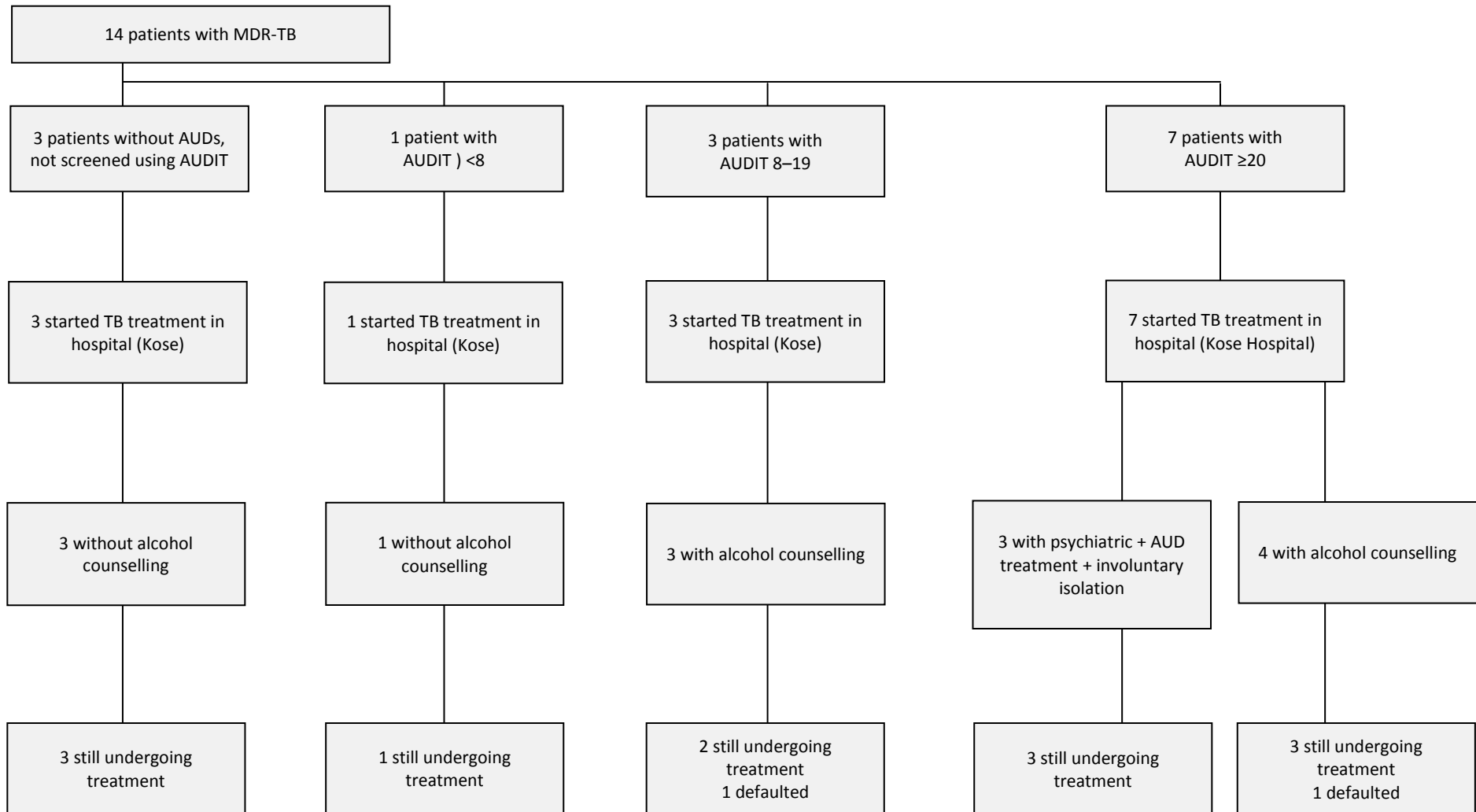


Fig. 2. Management of patients with MDR-TB



6. Lessons learnt and future steps

A number of achievements have emerged from this demonstration project. Necessary guidelines and tools were jointly elaborated, tested among the relevant professionals and are now ready to support a consistent and rapid expansion of AUD and social services across Estonia. Relevant training was provided to TB staff and continues to be offered. Using the experience developed during the project, AUD treatment will be routinely introduced for TB patients, at which point the National TB Register will start to collect data. The health system has been significantly strengthened by identifying good practices relating to AUD treatment and including them in the current draft of the National Alcohol Policy Green Paper. A scheme for the reimbursement of AUD-related services by the EHIF was also elaborated by the NIHD. While a number of checklists and questionnaires already exist for evaluating the patient's eligibility for social support schemes according to local legislation, the questionnaire developed within this project to assess the overall social status and need of patients was much appreciated and subsequently adopted by several services (for example, by harm-reduction services, working with people who inject drugs).

However, despite the well reasoned project planning and preparation, some of the objectives transpired to be too ambitious and were not able to be achieved within the time frame. The starting point was a country with still underdeveloped and poorly accessible AUD services. The project team based its work on the assumption that health care providers working outside the NTP could be motivated enough through financial and other support to make the required changes. However, the low number of TB patients considered to be in need – along with the workload represented by those patients, who are often perceived as “difficult” by health care staff – made the financial incentive offered for their AUD-related care not attractive enough to the mental health services, which were also suffering from a serious shortage of staff. The demonstration project highlighted how these services cannot be sustainably improved for TB patients without a much deeper consensus between the NEMC and the EHIF. It is clear that the Ministry of Social Affairs is caught between limited resources and the need to address a countrywide problem of high alcohol consumption, which is having a significant impact on population's health.

The project was also not able to establish systematic AUDIT screening of all TB patients. A number of treating physicians pre-selected the patients for AUDIT based on their subjective assessment of the likelihood of harmful alcohol use or presence of AUDs. Further training and motivation of health care professionals will be needed in future.

This initiative was not designed as a research project and it is therefore difficult to assess the impact of the newly introduced AUD and social services on TB treatment outcomes. The final evaluation of this project will be possible only after all patients have completed their TB treatment, in particular including those with MDR-TB. Even after that, the small number of patients involved may not allow a proper analysis of the project outcomes by the different types of intervention (that is, inpatient/outpatient TB treatment, AUD counselling and psychiatric consultation, involuntary isolation in hospital, and social support). Nevertheless, available evaluation data are encouraging. The TB treatment success rate achieved across all new smear-positive TB cases during the project period was 78%, which is higher than the 68% treatment success reported in 2010, before any supporting AUD and organized social services were offered. Of the 17 patients who accepted AUDIT screening, were identified as engaging in harmful drinking practices and received alcohol counselling, only 1 defaulted from treatment, despite the fact that the intensity of the AUD interventions was modest and the collaboration with psychiatric services suboptimal. Most of the patients that defaulted belonged to the group of patients with presumed AUD, but who refused AUDIT testing. It is possible that this is a group of patients unwilling to address underlying drinking

problems, which may also be a marker for poor TB treatment adherence. More intensive AUD treatment, as well as social support may be needed for such patients.

A larger cohort and a longer follow-up time (particularly for MDR-TB patients) – and preferably a proper trial design – are needed before firm conclusions can be drawn about the effectiveness of the interventions tested in this initiative. Such data would further inform the discussion about whether AUD counselling and treatment and social support should be recognized services reimbursed by the EHIF, which would facilitate countrywide expansion, and potentially also contribute to the improvement of TB treatment outcomes in Estonia. However, the decision to make AUD treatment reimbursable by the EHIF should be based, first and foremost, on evidence of the effectiveness and cost-effectiveness of these interventions on AUDs, both for TB patients and others.

References

1. *Global tuberculosis report 2012*. Geneva, World Health Organization, 2012 (WHO/HTM/TB/2012.6) (http://www.who.int/tb/publications/global_report/gtbr12_main.pdf, accessed 2 October 2013).
2. Tuberculosis (TB). Download data as CSV files. WHO MDR-TB burden estimates for 2011 [website]. Geneva, World Health Organization Tuberculosis Monitoring and Evaluation Team, 2012 (https://extranet.who.int/tme/generateCSV.asp?ds=mdr_estimates, accessed 3 March 2013).
3. *European status report on alcohol and health 2010*. Copenhagen, WHO Regional Office for Europe, 2010 (http://www.euro.who.int/__data/assets/pdf_file/0004/128065/e94533.pdf, accessed 2 October 2013).
4. Lonnroth K et al. Alcohol use as a risk factor for tuberculosis: a systematic review. *BMC Public Health*, 2008, 8:289.
5. Rehm J et al. The association between alcohol use, alcohol use disorders and tuberculosis. A systematic review. *BMC Public Health*, 2009, 9:450.
6. Kliiman K, Altraja A. Predictors and mortality associated with treatment default in pulmonary tuberculosis. *International Journal of Tuberculosis and Lung Disease*, 2010, 14(4):454–463.
7. Babor TF et al. *AUDIT. The alcohol use disorders identification test. Guidelines for use in primary care. Second edition*. Geneva, World Health Organization, 2001 (WHO/MSD/MSB/01.6a) (http://whqlibdoc.who.int/hq/2001/who_msd_msb_01.6a.pdf, accessed 2 October 2013).
8. Greek National School of Public Health, WHO Regional Office for Europe, Hellenic Centre for Disease Control and Prevention, Greek Ministry of Health and Social Solidarity. *Conference and workshop. Addressing ethical issues in tuberculosis programmes with a special focus on social determinants. Athens, Greece, 10–12 May 2010. Meeting report*. Copenhagen, WHO Regional Office for Europe, 2010 (<http://www.euro.who.int/en/what-we-do/health-topics/communicable-diseases/tuberculosis/publications/2010/conference-and-workshop-on-addressing-ethical-issues-in-tuberculosis-programmes-with-a-special-focus-on-social-determinants>, accessed 8 April 2013).
9. *Joint ECDC/WHO TB country visit 2010, Estonia. Report*. Stockholm, European Centre for Disease Prevention and Control, 2010.
10. Koppel A et al. Estonia. Health system review. *Health Systems in Transition*, 2008, 10(1):1–230.
11. *Tuberkuloosihigestumus Eestis 2008–2009 [Tuberculosis yearbook 2008–2009]*. Tallinn, National Institute for Health Development, 2010 (https://intra.tai.ee/images/prints/documents/130097303485_Tuberkuloosihigestumus_eestis_2008_2009_est.pdf, accessed 16 October 2013).
12. *Improving MDR-TB/TB treatment adherence by treating alcoholism: development of an innovative collaborative framework. Workshop in Tallinn, 6–7 October 2011*. Tallinn, National Institute for Health Development, 2011 (https://intra.tai.ee/images/eventlist/schedule_pdf/workshop_programme_06-07oct11_1366797231.pdf, accessed 2 October 2013).
13. Galmanova IY et al. ‘Sputnik’: a programmatic approach to improve tuberculosis treatment adherence and outcome among defaulters. *International Journal of Tuberculosis and Lung Disease*, 2011, 15(10):1373–1379.
14. *Alkoholi liigtarvitava patsiendi varajane avastamine ja nõustamine perearstipraksises. Metoodiline juhendmaterjal perearstidele ja pereõdedele [Early identification of excessive alcohol use and counselling in primary care. Methodological tool for primary care doctors and nurses]*. Tallinn, National Institute for Health Development, 2012 (<http://www.terviseinfo.ee/et/truekised/download/59>, accessed 16 October 2013).

15. *Alkoholi liigtarvitamise varajane avastamine ja patsiendi nõustamine. Metoodiline juhend tuberkuloosi ravi- ja sotsiaaltöötajatele ja teistele tervishoiutöötajatele [Early detection of alcohol abuse and patient counselling. Methodological tool for the healthcare and social workers of the tuberculosis institutions and other health care workers]*. Tallinn, National Institute for Health Development, 2012
(https://intra.tai.ee/images/prints/documents/134251977648_Alkoholi_liigtarvitamise_TUB_est.pdf, accessed 16 October 2013).
16. Rollnick S, Miller WR. *Motivational interviewing in health care: helping patients change behaviour*. New York, NY, The Guilford Press, 2008.
17. Rollnick S, Miller WR. *Motiveeriv Intervjuerimine tervishoius. Kuidas aidata patsientidel käitumist muuta [Motivational interviewing in health care. Helping patients change behaviour]*. Tallinn, National Institute for Health Development, 2012
(https://intra.tai.ee/images/prints/documents/132196115994_MI_print.pdf, accessed 16 October 2013).
18. *Nõuandeid alkoholitarvitamise vähendamiseks [Tips for reducing alcohol consumption]*. Tallinn, National Institute for Health Development, 2013
(https://intra.tai.ee/images/prints/documents/130155880660_Nouandeid_alkoholitarvitamise_vahendamiseks_est.pdf, accessed 5 Dec 2013).
19. *Много – это сколько? Советы по снижению употребления алкоголя [How much is much? Tips for reducing quantities of alcohol consumption]*. Tallinn, National Institute for Health Development, 2013
(https://intra.tai.ee/images/prints/documents/130155883296_Nouandeid_alkoholitarvitamise_vahendamiseks_rus.pdf, accessed 5 Dec 2013).
20. *Kui palju on palju? Tea oma tarvitatud alkoholikoguseid [How much is much? Know the quantities of your alcohol consumption]*. Tallinn, National Institute for Health Development, 2013
(https://intra.tai.ee/images/prints/documents/13008835287_Kui_palju_on_palju_est.pdf, accessed 5 Dec 2013).
21. *Много – это сколько? Знай количество употребленного тобой алкоголя [How much is much? Know the quantities of your alcohol consumption]*. Tallinn, National Institute for Health Development, 2013
(https://intra.tai.ee/images/prints/documents/130088346551_Kui_palju_on_palju_rus.pdf, accessed 5 Dec 2013).

Annex 1 Project activities

Date	Activity
2011	
15 September	Agreement for the Performance of Work signed between WHO Regional Office for Europe and the National Institute for Health development (NIHD).
5 October	Materials printed for patients (reprints from materials previously developed for patients in primary health care (PHC)) on harmful alcohol use, alcohol units, and counselling materials: <ul style="list-style-type: none"> • <i>Nõuandeid alkoholitarvitamise vähendamiseks [Tips for reducing alcohol consumption] (18).</i> • <i>Много – это сколько? Советы по снижению употребления алкоголя [How much is much? Tips for reducing quantities of alcohol consumption] (19).</i> • <i>Kui palju on palju? Tea oma tarvitatud alkoholikoguseid [How much is much? Know the quantities of your alcohol consumption] (20).</i> • <i>Много – это сколько? Знай количество употребленного тобой алкоголя [How much is much? Know the quantities of your alcohol consumption] (21).</i>
6–7 October	Workshop carried out in Tallinn on “Improving MDR-TB/TB treatment adherence by treating alcoholism: development of an innovative collaborative framework” (12). Experiences on tuberculosis (TB)/alcohol use disorders (AUDs) shared between the Russian Federation (Tomsk), Latvia, Lithuania and Estonia. Framework for collaboration discussed.
17 February – 23 November	TB staff trained on the Alcohol Use Disorders Identification Test (AUDIT) and motivational counselling (two training days in Viljandi Hospital (17 February 2011 and 19 May 2011) and in North Estonia Medical Centre (NEMC) Kose Department (2 March 2011 and 23 November 2011).
9 November	Project framework for collaboration discussed and agreed during coordination meeting.
22 November	Two international consultants (Håkan Leifman from the Centre for Psychiatry Research of Karolinska Institutet in Sweden and Thomas Karlsson from the Department of Alcohol, Drugs and Addiction of the National Institute for Health and Welfare in Finland) participated in the national conference on alcohol with the title “Nordic footsteps” in preparation for the Estonian Alcohol Strategic Plan.
November	Additional doctor with a psychiatric background employed at the NEMC in Kose.
1–2 December	Study tour took place to Finland to the Järvenpää Social Rehabilitation Substance Abuse Hospital and Espoo A-Clinic. Participants from the Estonian Psychiatric Society, National Tuberculosis Programme (NTP) and NIHD.
December	Questionnaire developed for social assessment of patients.
December	AUDIT practical tool developed and printed for TB personnel (test, example of units and score).
December	Application document submitted to the Estonian Health Insurance Fund (EHIF) to include new cost unit in the price list: <i>Treatment of TB patients with AUD and/or drug addiction (together with social support and occupational counselling) in TB departments.</i>
December	Microsoft Excel data collection tool developed at the NEMC.

Date	Activity
2012	
1 January	Enrolment of patients started.
3 February	Stakeholder roundtable discussions held to plan treatment and counselling services for AUD patients in Estonia.
6 March	Coordination meeting held with social workers, NTP and NEMC representatives regarding the training of social workers of Tallinn and Harjumaa county on TB.
9 March	Stakeholder roundtable discussions held to plan treatment and counselling services AUD patients in Estonia.
14 March	Coordination meeting held with NTP, NEMC and NIHD representatives to elaborate the NTP for 2013–2016 and to plan the countrywide expansion of TB/AUD treatment.
23 March	Workshop on AUD treatment held in Viljandi Hospital for psychiatrists.
27 March	Training carried out for social workers on early detection of AUDs, motivational interviewing and brief interventions.
March	Social services arrangements changed/introduced (board games brought in for TB patients at Kose Department NEMC).
March–May	AUDIT guidelines for TB personnel edited (social aspects and TB/AUD treatment) (printing scheduled for June 2012).
10 April	Training provided for social workers on early detection of AUDs, motivational interviewing and brief interventions.
20 April	Training provided for TB staff in Viljandi on TB/AUD treatment, motivational interviewing and how to avoid burnout of personnel.
May	Social services arrangements changed/introduced (computers with Internet access and wifi access brought in for patients at Kose Department NEMC).
June	AUDIT guidelines printed: <i>Early detection of alcohol abuse and patient counselling. Methodological tool for the healthcare and social workers of the tuberculosis institutions and other health care workers (15).</i>
June	AUDIT practical tool reprinted (first printed for TB personnel in December 2011) for use in all primary health care units (test, example of units and assessment of score).
30 June	Data on 105 TB patients are included on monitoring sheet.

Annex 2 AUDIT

The AUDIT (self-report version)						
<p>PATIENT: Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential so please be honest.</p> <p>Place an X in one box that best describes your answer to each question.</p>						
Questions	0	1	2	3	4	
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2–4 times a month	2–3 times a week	4 or more times a week	
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
3. How often do you have six or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
					Total	

Source: Babor et al., 2001 (7).

**COLLABORATIVE ACTION ON TUBERCULOSIS AND ALCOHOL ABUSE IN ESTONIA.
FIRST REPORT OF A DEMONSTRATION PROJECT**

**The WHO Regional
Office for Europe**

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

Albania
Andorra
Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Luxembourg
Malta
Monaco
Montenegro
Netherlands
Norway
Poland
Portugal
Republic of Moldova
Romania
Russian Federation
San Marino
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Tajikistan
The former Yugoslav
Republic of Macedonia
Turkey
Turkmenistan
Ukraine
United Kingdom
Uzbekistan

**World Health Organization
Regional Office for Europe
WHO Country Office, Estonia**

Gonsiori 29, 10147 Tallinn, Estonia
Tel.: +372 626 9350. Fax: +372 626 9353. Email: whoest@euro.who.int
Website: www.euro.who.int/Estonia