2E. Social protection, poverty alleviation and actions on other determinants of TB, such as migration and imprisonment

Belgium. BELTA-DOT: intensified and individualized case management for TB patients to improve compliance and treatment outcomes in Belgium

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Background

Belgium has a low incidence of TB (2016: 9.3 cases per 100 000 population, with 1047 cases) with typical characteristic of TB concentrated in big cities, in hard-to-reach populations and hard-to-hold at-risk groups. Although there is a declining trend in absolute numbers, cases are becoming increasingly complex, both socially and clinically. Managing these complex cases requires considerably more TB nurse time than routine therapy supervision allows for.

The treatment success rate among all notified cases has been rather disappointing for a high-income country, with a mean of 78.5% for the 2011–2013 period. The proportion of notified cases that abandoned treatment (due to loss to follow-up, refusal, non-compliance) was high, at 12.3% over this period. At the same time, treatment results have been much better: 86.8% of MDR-TB patients and 86.7% of XDR-TB patients were successfully treated *(74)*. This can be attributed to the quality of care (extra nurses for intensified MDR-TB case management), the ease of availability of SLDs and the possibility to enrol patients to the BELTA-TBnet project, an initiative supported by the National Health and Disability Insurance Institute (NHDII) and the Federal Public Service Health (health ministry) that ensures that TB treatment in general and MDR-TB treatment in particular is accessible to all patients. This project was cited as a best practice by WHO in 2013 *(75)*.

Experts of Belgian TB organizations have participated in several multicountry working groups for consensus papers and guidelines for urban TB *(76)* and vulnerable populations *(77)*. This exchange of best practices confirmed what could be observed in the field: first and foremost, the Belgian programme had to improve treatment results and lower the number of patients abandoning treatment. The most evidenced-based strategy to achieve this was to introduce intensified, individualized multidisciplinary case management. This could only be implemented by providing extra staff time, well-trained specialized TB nurses or social workers.

Description of the good practice

The health ministry and NHDII agreed to support the BELTA-DOT pilot operational research project, which started on 1 July 2014. All actions and interventions were based on best practices, scientific evidence and international guidelines. The project aimed to improve treatment results by intensifying case management and personalizing supportive interventions in a people-centred way. The target group comprised all TB patients with a risk of non-compliance.

All notified cases had to be seen by an experienced TB nurse. A standardized risk analysis was performed to score the risk of non-compliance. For each patient considered to be at risk of non-compliance, a personalized treatment supervision plan with specific interactions was developed. Supportive interventions included home visits of varying frequency (but could be as often as daily), telephone calls, pill boxes, and accompanying patients to the physician/pharmacy/X-ray facility. Each patient was appointed a TB case manager and, if possible, an ambulant care network was organized around the patient using family members, general practitioners, city social workers,

pharmacists and others, with the TB case manager being responsible for overall management.

Financial support by the NGO Damien Foundation enabled rental of beds in homeless shelters for patients with unstable housing conditions until treatment was completed successfully. Financial incentives such as a social cheque were used for patients in real need and in danger of becoming non-compliant. A social cheque is an existing system of distributing monetary payments that can only be spend on food or clothes. For every week the patient was compliant, a number of cheques were handed out. This turned out to be a cheap and easy to use motivator that is greatly appreciated both by patients and TB staff. Other enablers/incentives were also provided: bus/tram/train tickets, meal coupons for social restaurants, clothes and sleeping bags. When the pilot project ended on 31 December 2016, the health ministry and NHDII decided to continue funding BELTA-DOT within the framework of a budget stream earmarked for "universal access to health care for vulnerable groups".

The practice is fully in line with the "Equitable access to quality treatment and continuum of care for all people with TB, including DR-TB, and patient support to facilitate treatment adherence" component of the Tuberculosis Action Plan for the WHO European Region 2016–2020 *(7)*, and also fits the component, "Political commitment with adequate resources, including universal health coverage policy". This combination of evidence-based good practices, political commitment and financing human resources for TB control has enabled excellent results to be achieved.

Regarding ethical appropriateness, it was decided not to work with a case–control design because withholding an evidence-based best practice from a control group was considered unethical. As a result, it was not possible to estimate the separate effects of the different interventions.

Evidence of impact

Treatment outcomes for pulmonary culture-positive TB patients of the cohort included in the pilot project were significantly improved compared with the 2011–2013 cohorts of the national TB registry (pre-BELTA-DOT cohort). The treatment success rate increased from 78.5% to 84.5%, while the proportion of patients abandoning treatment dropped from 12.3% to 6.3%. The improvement was observed in men and women, in nationals and non-nationals, within most risk groups, and in both pulmonary and extrapulmonary cases.

A total of 405 patients in the BELTA-DOT cohort were considered to present a moderate or high risk of non-compliance. To address this, more than 10 000 interventions were planned for these at-risk population groups; most patients benefited from a combination of different support activities tailored to their individual needs. Treatment outcomes before and after implementation of the BELTA-DOT are shown in Table 19.

The more individualized approach promoted by BELTA-DOT, together with the possibility to offer practical help such as lodging or social cheques, improved and strengthened the relationship of trust between TB nurses and patients, which had a very beneficial impact in terms of compliance. Nurses say they feel better armed to help patients with very complex

Table 19. Comparison of treatment outcomes for the BELTA-DOT (enrollment 1 October 2014–31 December 2015) and pre-BELTA-DOT 2011–2013 cohorts

Outcome	Mean for the 2011–2013 cohorts (%)[a]	BELTA-DOT patient cohort			
		TB patients with pulmonary data (*n* = 444)		Other patients (%)[b] (*n* = 402)	All patients (%) (*n* = 846)
		%	Difference from 2011–2013 cohorts		
Successful	78.5	84.5	*P* = 0.001	90.5	87.4
Treatment interrupted[c]	12.3	6.3	*P* = 0.001	5.5	5.9
Death	9.1	9.2		4.0	6.7

[a] Pulmonary culture and TB patients only; national TB registry. [b] Pulmonary culture and/or extrapulmonary TB. [c] Not treated for over two months (refusal, loss to follow-up).

social situations. Several TB-experts and physicians said they felt more comfortable discharging patients with complex social situations from hospital, knowing that intense ambulant care was available locally. This suggests that better ambulatory case management may lead to shorter hospitalization periods for these cases. However, as this finding was beyond the scope of the proposed research, it was not possible to quantify this observation.

The extra staff time provided in the context of the project strengthened the already strong collaboration with specialized hospitals and TB physicians, thus creating a direct link between outreach nurses operating at street level and the specialized tertiary care unit. This has improved information exchange, the opportunity for direct staff contacts, and patient referrals.

Sustainability of the good practice

The health ministry firmly adheres to the principles of evidence-based medicine and collaboration with WHO. The Country Cooperation Strategy (WHO – Belgium) 2016–2022 *(78)* states that TB is a priority topic. The Superior Health Council of Belgium issued a Position Paper on TB *(79)*, strongly advising that increased efforts should be made to improve treatment supervision. This advice was reaffirmed by the TB Working Group at the Interministerial Conference on Health in February 2017. Following this and the successful results of the project, the health ministry and NHDII agreed to extend the funding until mid-2020. This political commitment is the best guarantee for sustainability of the practice.

The practice is funded through the "access to health care" budget stream. This is a modest budget (in the context of the whole health-care budget) but was shown to be sufficient to obtain good results. Moreover, the project works closely with other initiatives delivering health-care to underserved population groups, enabling synergy (through a coordinating body, joint database and standard procedures) and more efficient use of the limited funds available, thus further improving sustainability of the practice.

Georgia. TB ECHO project: Extension for Community Healthcare Outcomes

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Background

The last few decades have seen major improvements in TB care and treatment in Georgia. However, significant work is still required to achieve the goals of the End TB Strategy *(4)*, and TB remains a major public health problem. The emergence of DR-TB has made TB care and treatment even more complex and costly, requiring the involvement of specialists and multidisciplinary teams for the successful management and care of TB patients.

Georgia has 10 principal TB facilities at regional level, with considerable capacity. These include the central facility in Tbilisi (National Centre for Tuberculosis and Lung Diseases), which serves as the national centre for clinical excellence, and a number of TB cabinets in rural areas of the country. Additionally, full access to TB services is provided in correctional facilities. Despite universal access to TB diagnosis and treatment and significant patient social support in Georgia, M/XDR-TB and TB patients with comorbidities from rural and underserved areas of Georgia are usually required to travel to central TB facilities to receive appropriate treatment. This creates a geographical barrier for some patients and, along with other factors, may contribute to the high rate of loss to follow-up in Georgia, one of the highest in the WHO European Region: 20% of MDR-TB patients and 11% of the overall cohort of TB patients enrolled to treatment in 2015 were lost to follow-up. In addition, the lack of specialists treating MDR-TB at the regional level leads to delays in initiating appropriate treatment. Given that the Central DR-TB Consilium is the only national entity eligible to assign appropriate M/XDR-TB treatment regimens and/or make clinical decisions in case of complications, the process of patient enrollment to MDR-TB treatment or appropriate treatment modification usually takes a considerable amount of time. The Committee previously conducted quarterly mobile consilium visits to regional TB facilities or patients themselves travelled to Tbilisi for treatment initiation. In both cases, travel for patient or the Committee was time consuming and costly; thus, an alternative solution was necessary.