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Improving TB patient compliance among the socially disadvantaged in a low-burden high-income country

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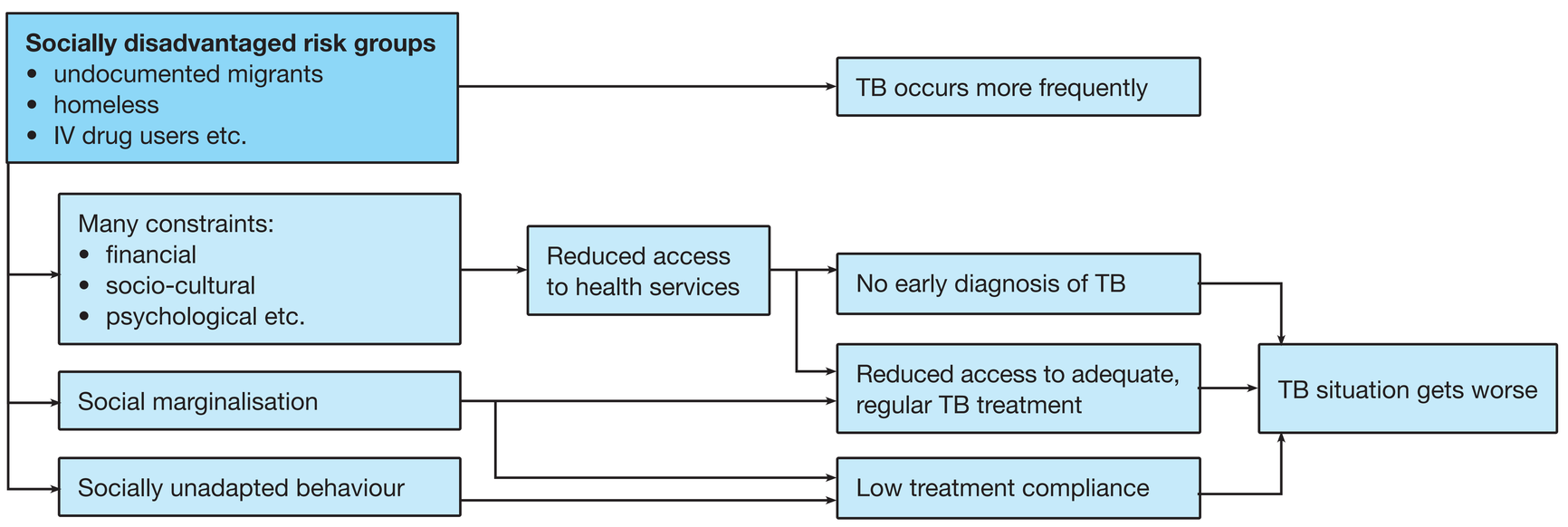
The downward spiral

TB occurs more frequently in a number of socially disadvantaged risk groups: undocumented migrant, homeless, IV drug users etc. These groups have reduced access to the health services because of financial, socio-cultural and other constraints. As a result, the opportunity of an early diagnosis of TB is missed. And once the diagnosis of TB is made, these same constraints jeopardize access to adequate, regular TB treatment. Moreover, the marginalisation and/or the socially unadapted behaviour of the persons belonging to these risk groups severely compromise the treatment compliance.



Breaking the vicious circle: BELTA-TBnet removes the financial obstacles

In 2005, the BELTA-TBnet project was launched, funded by the Belgian government. BELTA-TBnet ensures free diagnosis and treatment of TB for everybody who is present on the Belgian territory, irrespective of their legal status or social coverage. From the start of the project on 1 December 2005 up to 30 September 2009, a total of 566 persons were registered for BELTA-TBnet support: see table 1. The 494 TB patients represent 11.4% of all notified TB patients.

The majority of the persons registered for BELTA-TBnet support (85%) had insufficient social coverage: see figure 1. The reason behind the lack of coverage is shown in figure 2. The patients with social coverage required BELTA-TBnet support because they were treated with drugs that were not reimbursed by the health insurance.

Because the BELTA-TBnet patients belong to specific risk groups, they differ significantly from the non-BELTA-TBnet patients in several aspects: see table 2.

Figure 1. Social coverage status of the 566 persons who required BELTA-TBnet support

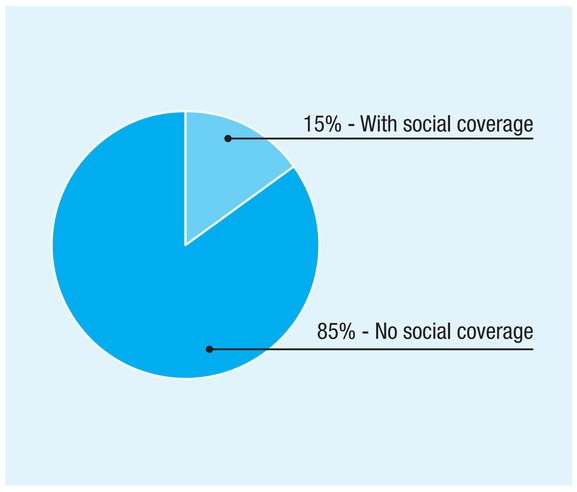


Figure 2. Reason of lack of coverage among 481 persons with no social coverage who required BELTA-TBnet support

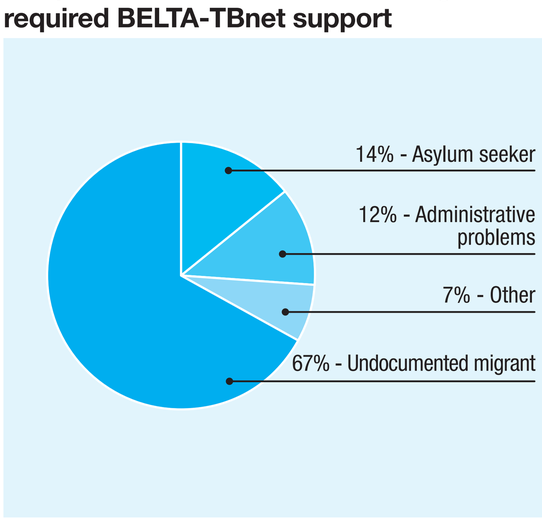


Table 1. Persons registered for BELTA-TBnet support from 01/12/05 to 30/09/09

Type of support	Number
TB patient requiring TB treatment	494
Person requiring preventive therapy	46
Person requiring diagnostic investigations	26
Total	**566**

Table 2. Comparison between BELTA-TBnet and non-BELTA-TBnet patients among the pulmonary culture positive TB patients in the 2006 and 2007 cohorts.

Parameter		Patients not included in BELTA-TBnet (n = 1,112)	Patients included in BELTA-TBnet (n = 146)	Statistical significance
Gender	% male	67.0%	67.1%	p=1.0
Age	median age	43 years	31 years	p<0.001
Origin	% non-Belgian	41.7%	94.5%	p<0.001
HIV status	% HIV+	3.9%	9.6%	p=0.005
Legal status	% asylum seeker	9.3%	24.0%	p<0.001
	% illegal	3.1%	55.5%	p<0.001
	% detainee	2.5%	1.4%	p=0.567
Area of residence	% living in Brussels	26.9%	55.5%	p<0.001

Impact of BELTA-TBnet

The impact of BELTA-TBnet can be seen in 3 major areas:
1. improved access to TB diagnosis and treatment as a result of removing financial obstacles;
2. providing a social network for disadvantaged patients (this has resulted in 12% of the BELTA-TBnet patients being removed from the project register because it was possible to arrange for proper social coverage);
3. very satisfactory treatment outcomes, also in traditionally non-compliant groups and MDR TB patients.

The treatment results of the BELTA-TBnet patients are comparable to the non-BELTA-TBnet patients, even though they belong to risk groups that have a tendency to be undisciplined and non-compliant. The treatment success among the non-MDR BELTA-TBnet patients reaches 83.5%, compared to 72.1% among the non-BELTA-TBnet patients (see table 3). The latter group is significantly older, however (median age 43 years, against 31 years for the BELTA-TBnet patients), and the difference totally disappears after standardisation for age. While the treatment success of the BELTA-TBnet patients is satisfactory, the default rate remains fairly high at 11.3%. Comparison with the non-BELTA-TBnet patients is difficult because default is not separated from other reasons of loss to follow-up.

Among the MDR TB patients, 65% lack social coverage, but all are included in the BELTA-TBnet project because second line drugs are not reimbursed by the health insurance. When comparing the treatment outcome of the MDR patients treated before and after the start of BELTA-TBnet (see table 4), the difference in treatment success is statistically significant (p = 0.019, Fisher's exact test, 2-tailed), while both groups are comparable regarding age, sex, origin and social coverage.

Table 3. Treatment outcome of the non-MDR pulmonary TB patients with a positive culture result in the 2006 and 2007 cohorts (excluding patients with a revised diagnosis and those still on treatment)

	Patients not included in BELTA-TBnet		Patients included in BELTA-TBnet	
Treatment success	776	72.1%	96	83.5%
Death	126	11.7%	0	0.0%
Default	175	16.2%	13	11.3%
Transfer out			5	4.3%
Treatment interrupted due to side effects			1	0.9%
Total	**1,077**		**115**	

Table 4. Treatment outcome of the MDR TB patients in the 2001-2006 cohorts (excluding patients with a revised diagnosis and those still on treatment)

	MDR patients treated after the start of BELTA-TBnet		MDR patients treated prior to the start of BELTA-TBnet	
Treatment success	35	87.5%	39	65.0%
Death	1	2.5%	9	15.0%
Default	3	7.5%	11	18.3%
Transfer out	1	2.5%	1	1.7%
Total	**40**		**60**	

BELTA-TBnet, an important step forward, but not the final answer

Free access to TB diagnosis and treatment has helped to improve treatment success. But removing financial barriers is, in itself, insufficient to ensure patient compliance among socially disadvantaged groups such as undocumented migrants, homeless, IV drug users etc. The field workers of VRGT and FARES are paying special attention to intensify DOT among these groups but extra efforts are needed.

Observations in the field show that standardised approaches to improve patient compliance are ineffective. Each case requires a careful and individualised analysis of the underlying causes of non-compliance. The BELTA-TBnet project can provide a framework that will allow to assess the problem quantitatively and qualitatively. Due to its flexibility, the project is able to propose customized solutions such as translator services, use of an intercultural mediator, educator or psychologist, non-monetary incentives, social mobilisation etc.

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