

The Belgian Experience

MDR Tuberculosis -- Steven Callens, Ghent University Hospital



References

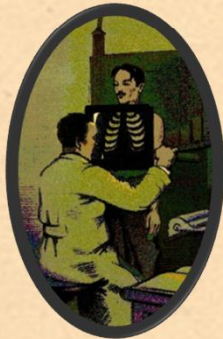
- **Belta TB net 2013** Year Report & Presentations
- **VRGT/FARES 2013** Year Report & Presentations
- From multidrug- to extensively drug-resistant tuberculosis: upward trends as seen from a 15-year nationwide study. Stoffels K, Allix-Béguet C, Groenen G, Wanlin M, Berkvens D, Mathys V, Supply P, Fauville-Dufaux M. PLoS One. 2013 May 9;8(5):e63128. doi: 10.1371/journal.pone.0063128. Print 2013.
- Epidemiology of MDR-TB in a Belgian infectious diseases unit: a 15 years review. van Heurck R, Payen MC, De Wit S, Clumeck N. Acta Clin Belg. 2013 Sep-Oct;68(5):321-4. **(Saint Pierre)**
- http://www.euro.who.int/__data/assets/pdf_file/0020/216650/Best-practices-in-prevention,control-and-care-for-drugresistant-tuberculosis-Eng.pdf

HOBOKEN Ontzilverings Fabriek
Usine de Désargéntation

1897

Belgium:

16.394 deaths a year



"Indien het belang van een ziekte voor de mensheid gemeten wordt aan de hand van het aantal sterfgevallen als gevolg van de ziekte, dan moet tuberculose als een veel ernstiger besmettelijke ziekte beschouwd worden als de pest, cholera en dergelijke. Eén op de zeven mensen sterft aan tuberculose. Indien men alleen de productieve leeftijdsgroep in beschouwing neemt, voert tuberculose één derde van de mensen af, vaak zelfs meer." (R. Koch)

15. Institut Georges Born. **Wenduyne s/Mer**
La façade principale.

Gesticht Georges Born
De voorgevel



1929



**BELGISCH NATIONAAL WERK
TOT BESTRIJDING DER TUBERCULOSE**

Instelling van Openbaar Nut

Vereeniging zonder winstgevend doel

TE ELSENE

STANDREGELN



V.R.G.T.
VERENIGING VOOR RESPIRATOIRE
GEZONDHEIDSZORG EN TUBERCULOSEBESTRIJDING
(V.Z.W.)

F.A.R.E.S.
FONDATION CONTRE LES AFFECTIONS RESPIRATOIRES
ET POUR L'EDUCATION A LA SANTE (ASBL)

DISPENSARIUM
CONSULTATIEBUREAU

CENTRE DE PREVENTION
MALADIES RESPIRATOIRES

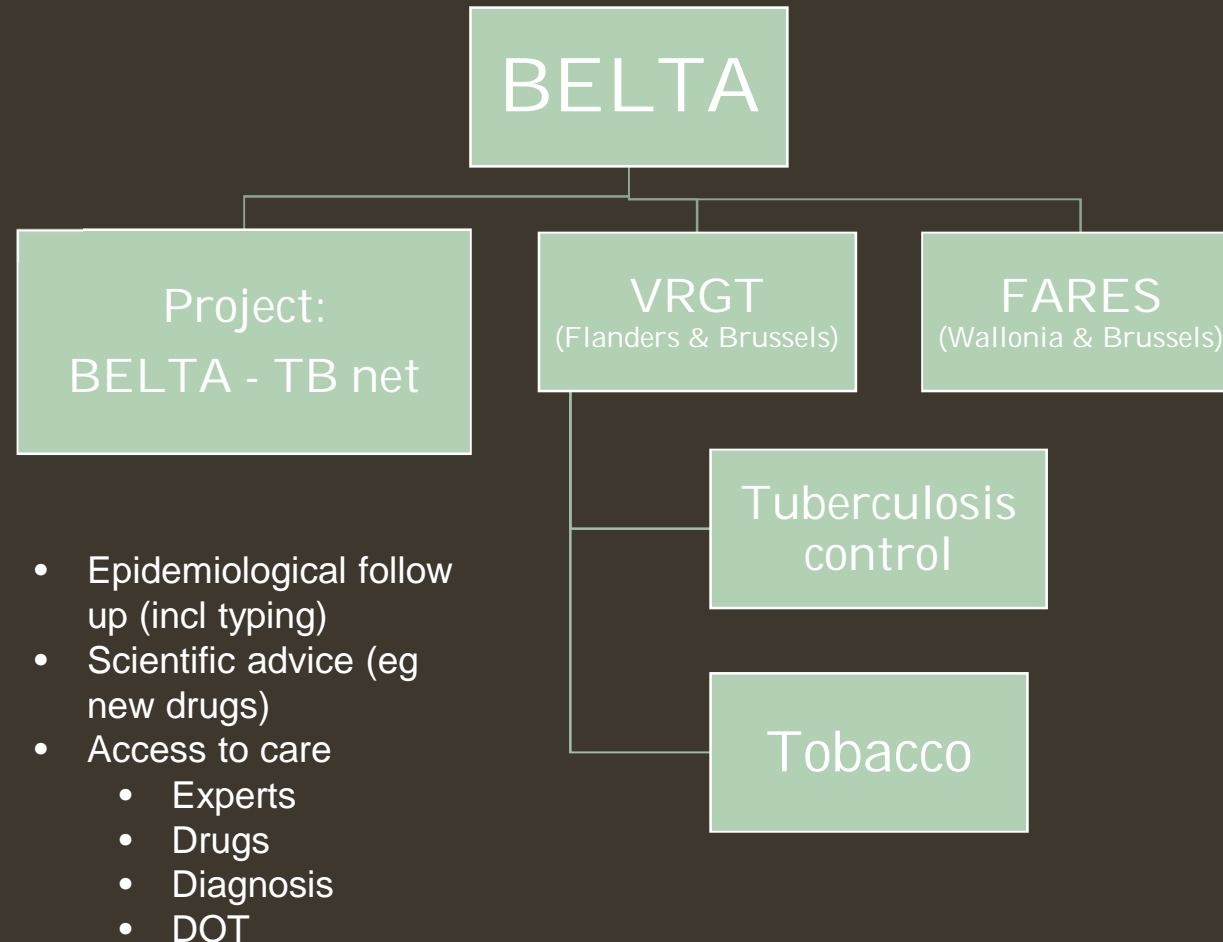
'80s

300 deaths

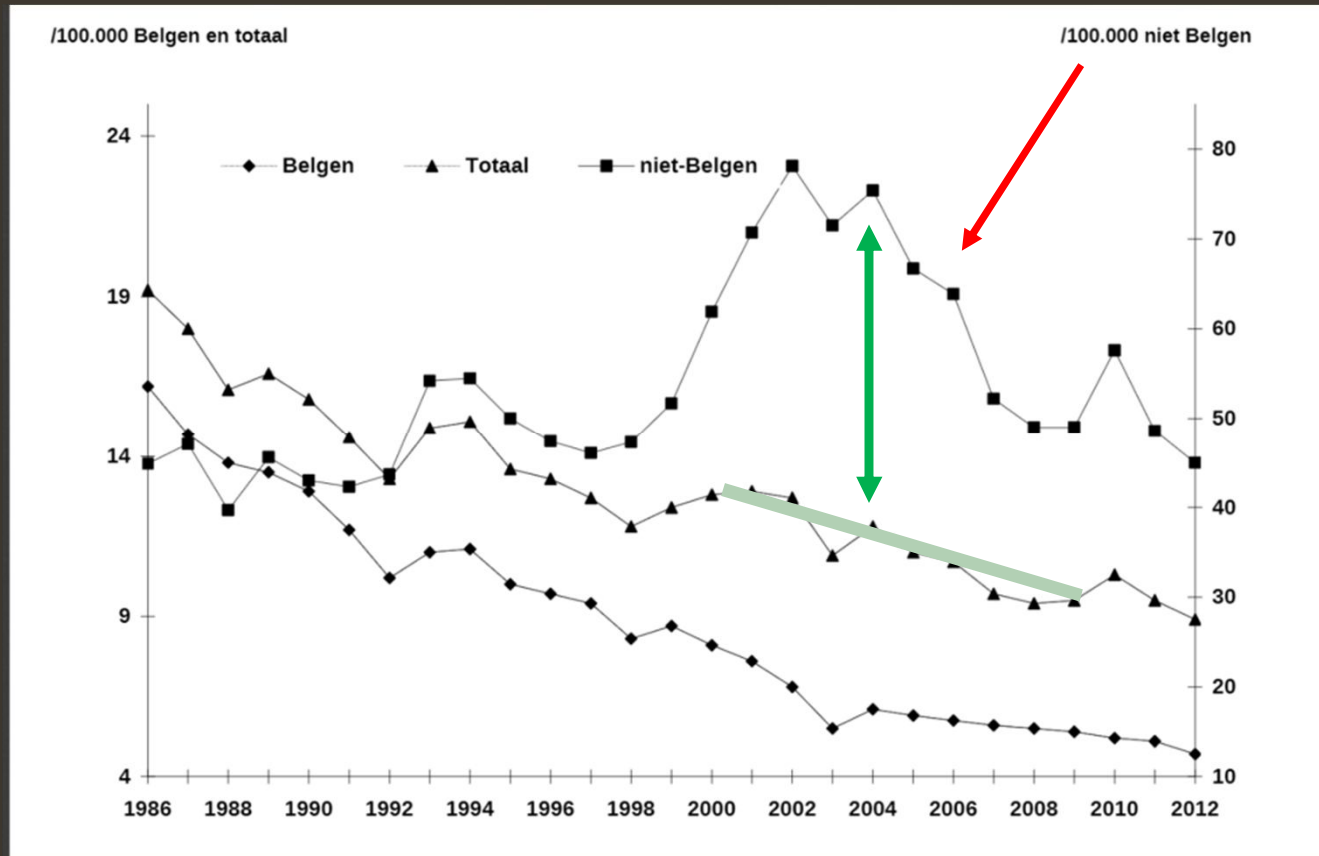
Belgian Lung and Tuberculosis Association (Belta) = *Oeuvre National* = *Nationaal Werk*

2013

14 doden



Incidence TB – Nationality: 1986 to 2012



TBC et immigration

- Non-Belges
 - Belgique : **53,3% en 2012** - 18% en 1993
 - Villes : Bruxelles : 65,7 % ; Liège : 54,6 %
 - 91,3% pays à haute prévalence
 - Nationalité : Maroc /Roumanie/RDC (¼ cas)
- **Demandeurs d'asile et illégaux**
 - Belgique : **17,2%** (BXL : 22,5% ; Liège : 18,2%)
- Primo-arrivants : risque TBC plus élevé
- **Autre situation à risque = retour pays origine (jeunes enfants)**



People seeking asylum in Belgium

- **Entry screening (CXR)** at foreigners office, coverage 95 %

2012:

detection rate at foreigners office

160,7 /100 000

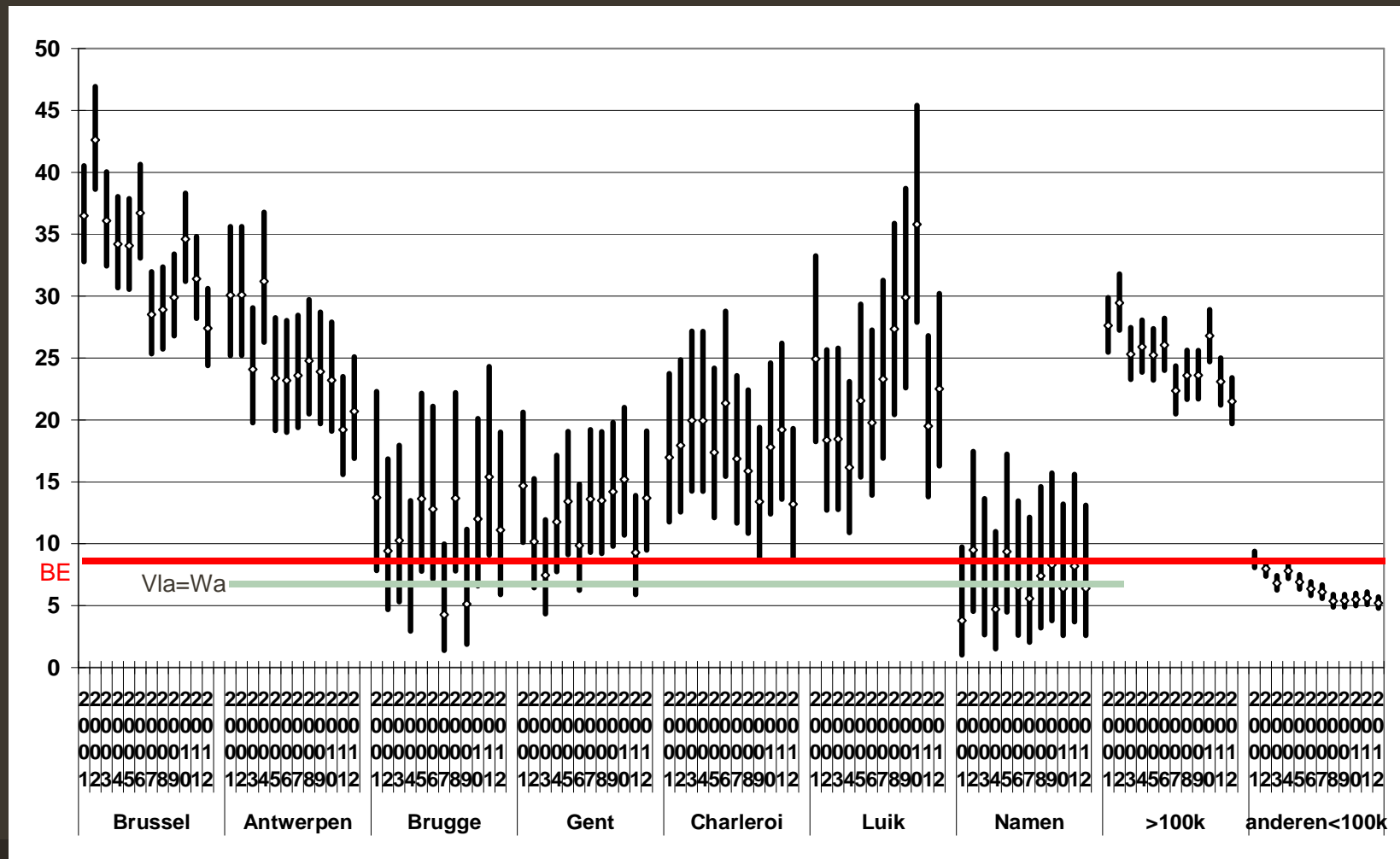
Belgium

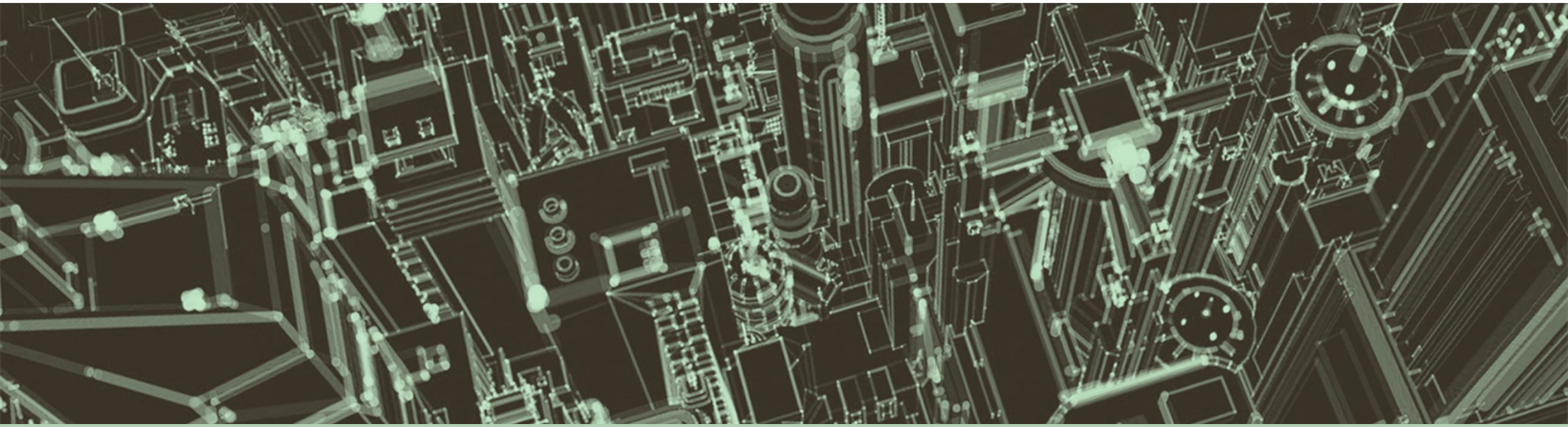
8,9/100 000 (2012)

- **Register:**
 - 50 % of notified cases are of non-Belgian nationality
 - So 50% among Belgians
- Of all cases:
 - 10,5 % asylum seeker
 - 6,7 % non-documented

82,8 % of all cases not among AS or non-doc's

TB = Big City Problem

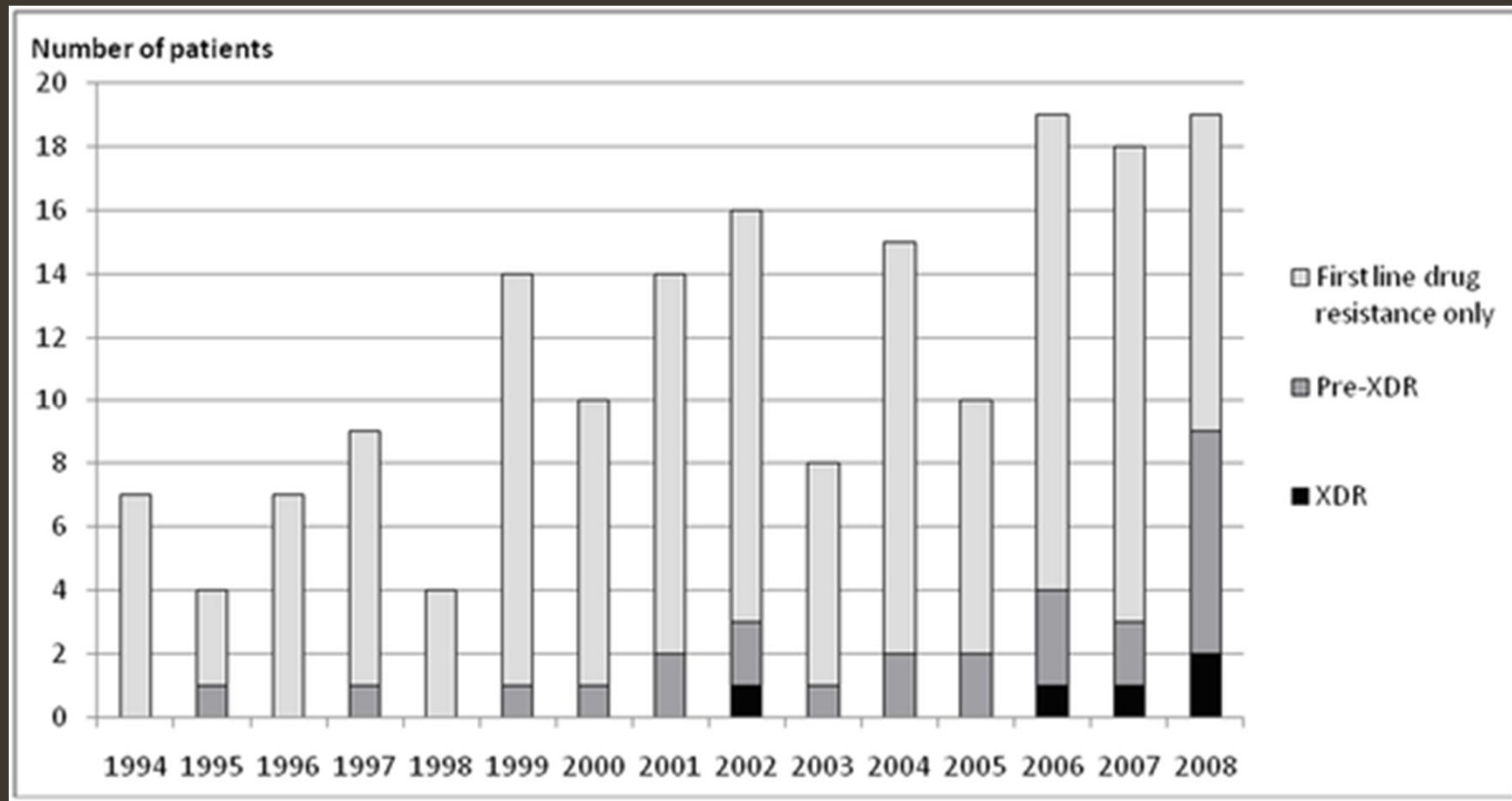




Multi Drug Resistant Tuberculosis



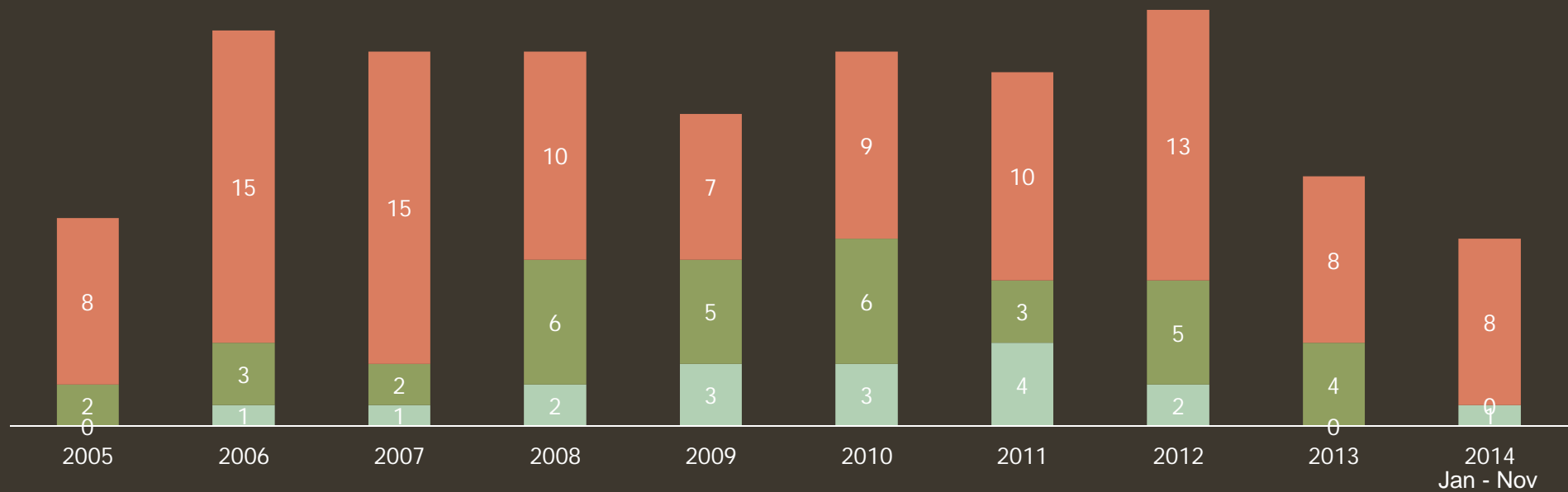
Figure 1. Number of MDR with first-line drug resistance only, pre-XDR and XDR isolates in the study cohort.



Stoffels K, Allix-Béguec C, Groenen G, Wanlin M, et al. (2013) From Multidrug- to Extensively Drug-Resistant Tuberculosis: Upward Trends as Seen from a 15-Year Nationwide Study. PLoS ONE 8(5): e63128. doi:10.1371/journal.pone.0063128
<http://www.plosone.org/article/info:doi/10.1371/journal.pone.0063128>

Resistentiepatroon - België

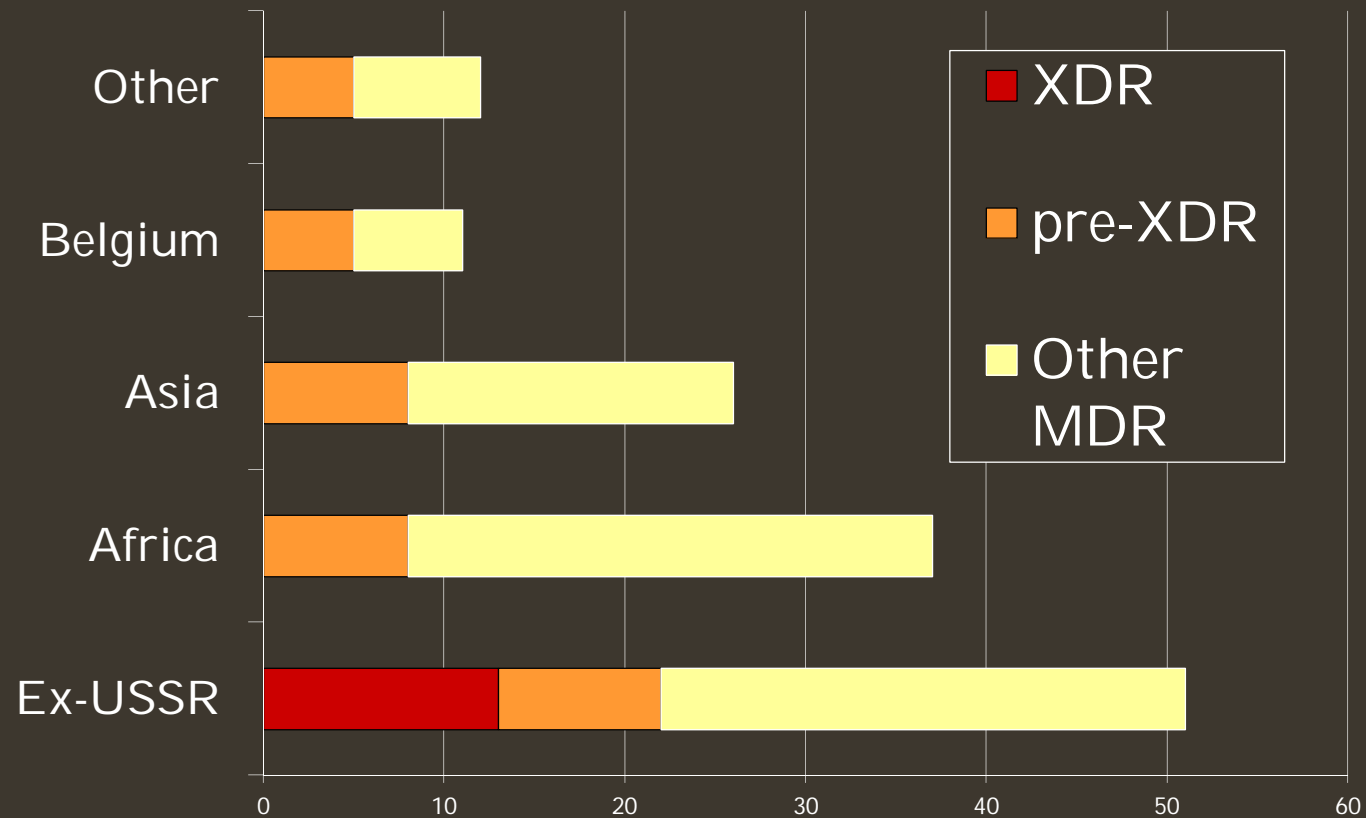
■ XDR ■ Pre XDR ■ MDR



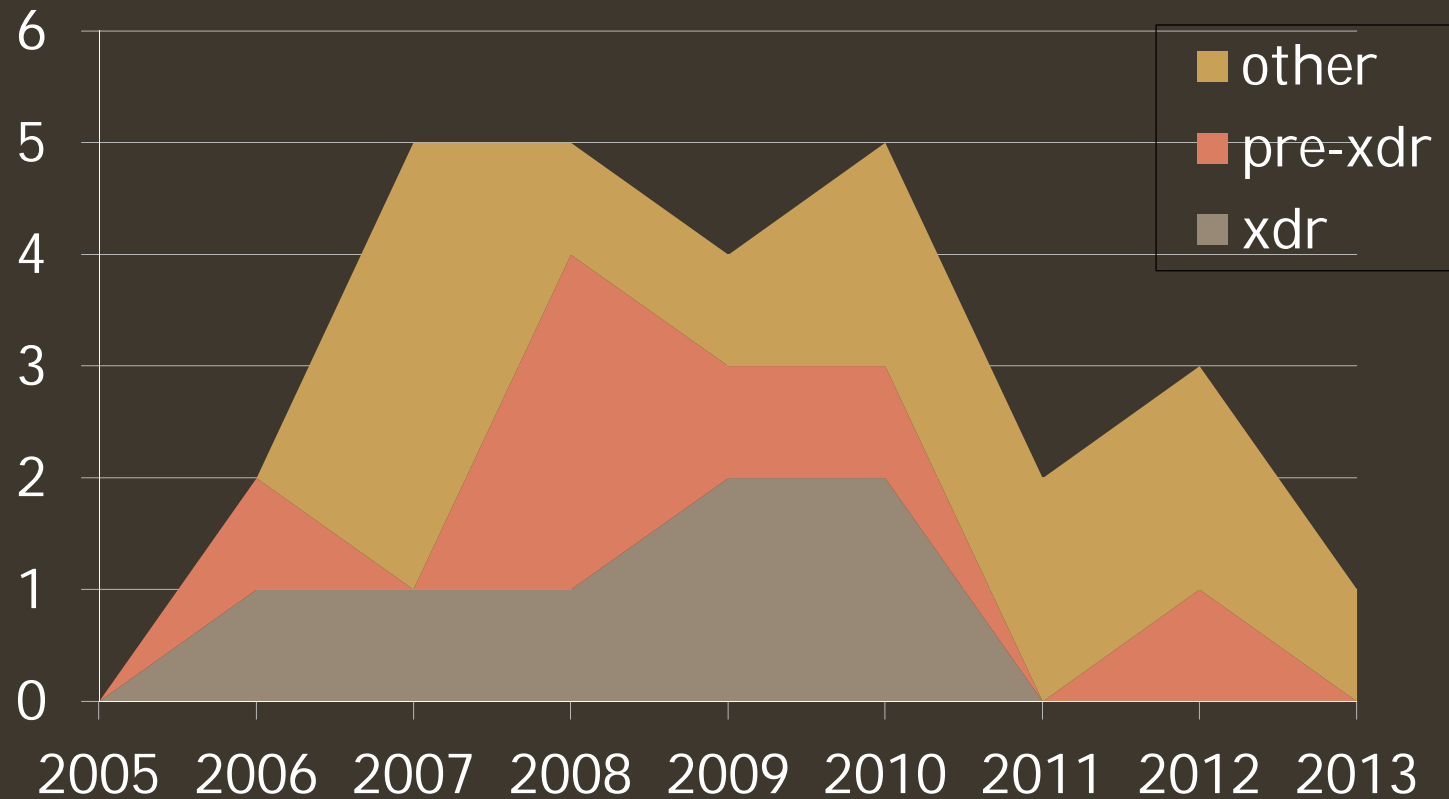
DST results 2013

RMP	INH	EMB	PZA	RFB	AMK	CAP	OFL	MOX	PTA	PAS	LIN
Red	Red	Red	Red	Red	Yellow	Yellow	Red	Red	Yellow	Yellow	Yellow
Red	Red	Red	Red	Red	Yellow	Yellow	Red	Red	Yellow	Yellow	Yellow
Red	Red	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Red	Yellow	Yellow
Red	Red	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Red	Red	Yellow	Yellow	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Red	Red	Red	Yellow	Red	Yellow	Yellow	Yellow	Yellow	Red	Yellow	Yellow
Red	Red	Yellow	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Red	Red	Red	Yellow	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Red	Red	Red	Yellow	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Red	Red	Red	Yellow	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Red	Red	Yellow	Red	Red	Yellow	Yellow	Red	Red	Red	Yellow	Yellow

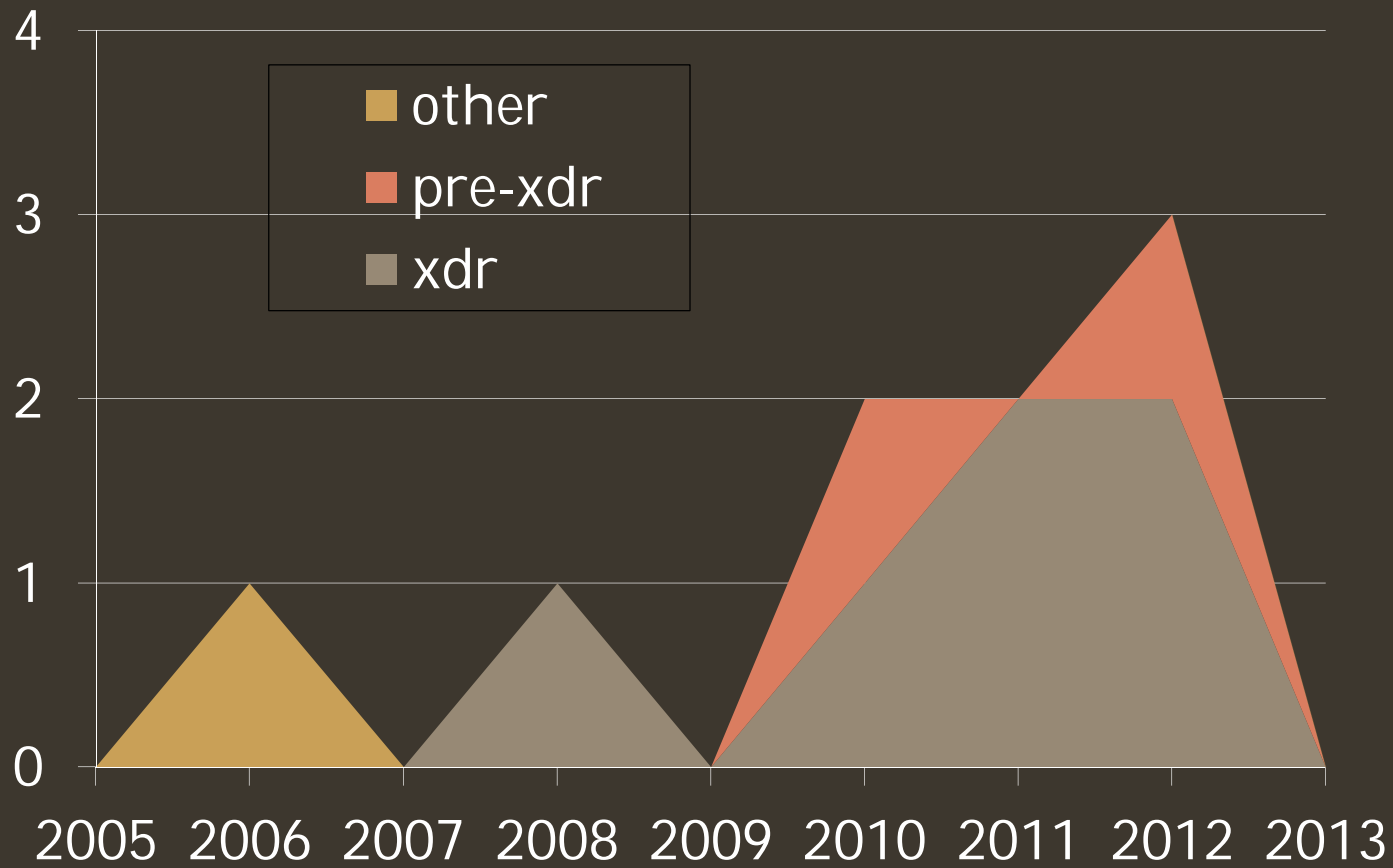
Resistance pattern according to country of origin (absolute numbers)



Evolution of resistance patterns in patients from Chechnya



Evolution of resistance patterns in patients from Georgia



15 yr Treatment Experience : Saint Pierre - Brussels

- 84 episodes
 - Completion: 41 MDR-TB, 1 XDR-TB
 - Failed treatment: 3 MDR-TB, 2 XDR-TB
 - Lost To Follow up: 16 MDR-TB
 - Cure: None (but no sputum can be obtained)
- Treatment duration:
 - 406 days (288-589)
- Median time to sputum conversion
 - MDR-TB: 69 days (range 37-116)
 - XDR-TB: 97 days (range 85-188)
- Median hospitalisation time
 - MDR-TB: 105 days (61-149)
 - XDR-TB: 288 days (262-305)

Treatment Outcome: 1.103 patients (All TB)

Resultaat	Aantal	Procent	
Therapeutisch succes	754	68,4%	79,7%
Sociale zekerheid geregulariseerd	125	11,3%	
Verdwenen	109	9,9%	12,6%
Overleden	22	2,0%	
Stop behandeling wegens nevenwerkingen	5	0,5%	
<u>Therapiefalen</u>	2	0,2%	
Getransfereerd naar buitenland	45	4,1%	7,8%
Stop behandeling wegens herziening initiële TB-diagnose	23	2,1%	
Stop toediening tweedelijns-medicatie	18	1,6%	

Treatment Experience MDR-TB: Belta TB

- Cohort MDR-TB 2004 -2011
 - Treatment duration 529 days
 - Cure rate: 67.8%
 - Before Belta TB net: 63.0%
 - **After Belta TB net: 75.8%**
- Overall Belta TB: 68,4%
- Europe: 53.6% (2010)

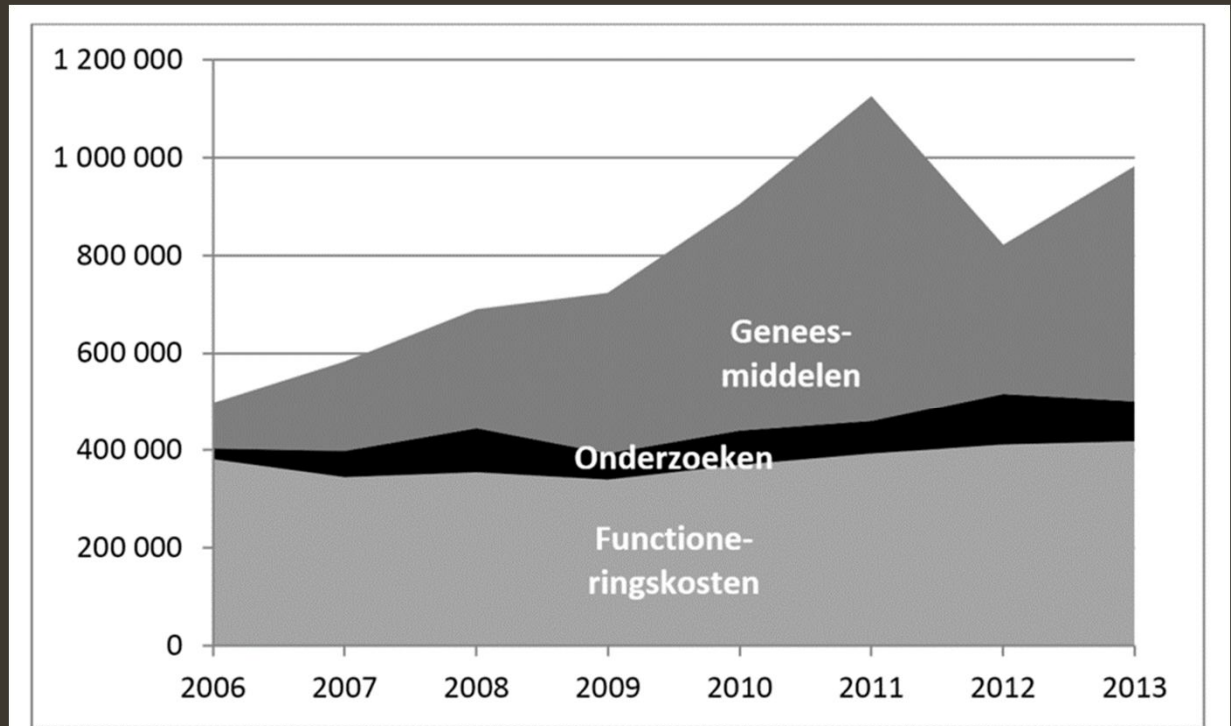
Tabel 18. Gemiddelde kostprijs TB-behandeling in België in 2013, met een vergelijking met de prijzen van 2011 en 2012

Type patiënt (duur van de behandeling)	Kostprijs (in €) van de geneesmiddelen* voor de totale duur van de behandeling			Meerprijs (in 2013) ten opzichte van de multisensibele behandeling
	2011	2012	2013	
Multisensibel (6 maanden)	366	368	368	
Ongecomplieeerde MDR (18 maanden)	14.542	14.307	13.826	±38 maal duurder
Pre- XDR (24 maanden)	41.422	41.229	32.027	±87 maal duurder
XDR (24 maanden)	105.502	67.067	62.967	±171 maal duurder

* Hospitalisatiekosten, daghospitalisatie, thuisverpleging, niet-TB-medicatie, raadplegingen en opvolgonderzoeken niet meegerekend

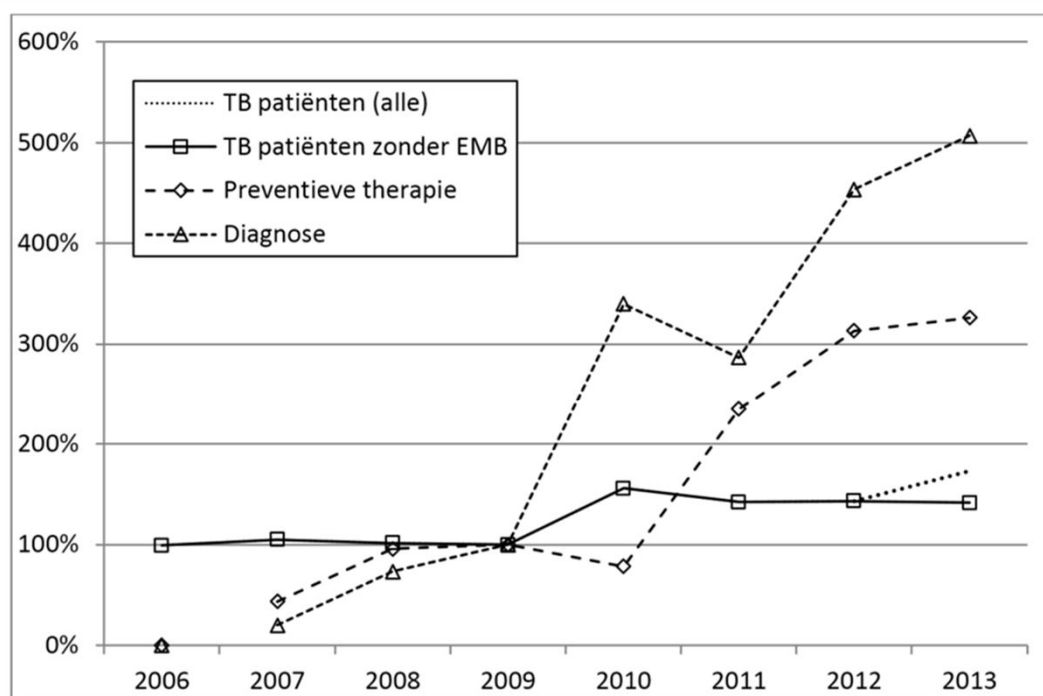
Expenses Belta TB Net

- Cost of drugs is not rising as much as number of cases
 - More efficient use of drugs?



Figuur 10. Uitgaven BELTA-TBnet 2006 – 2013

Interventions Belta TB net

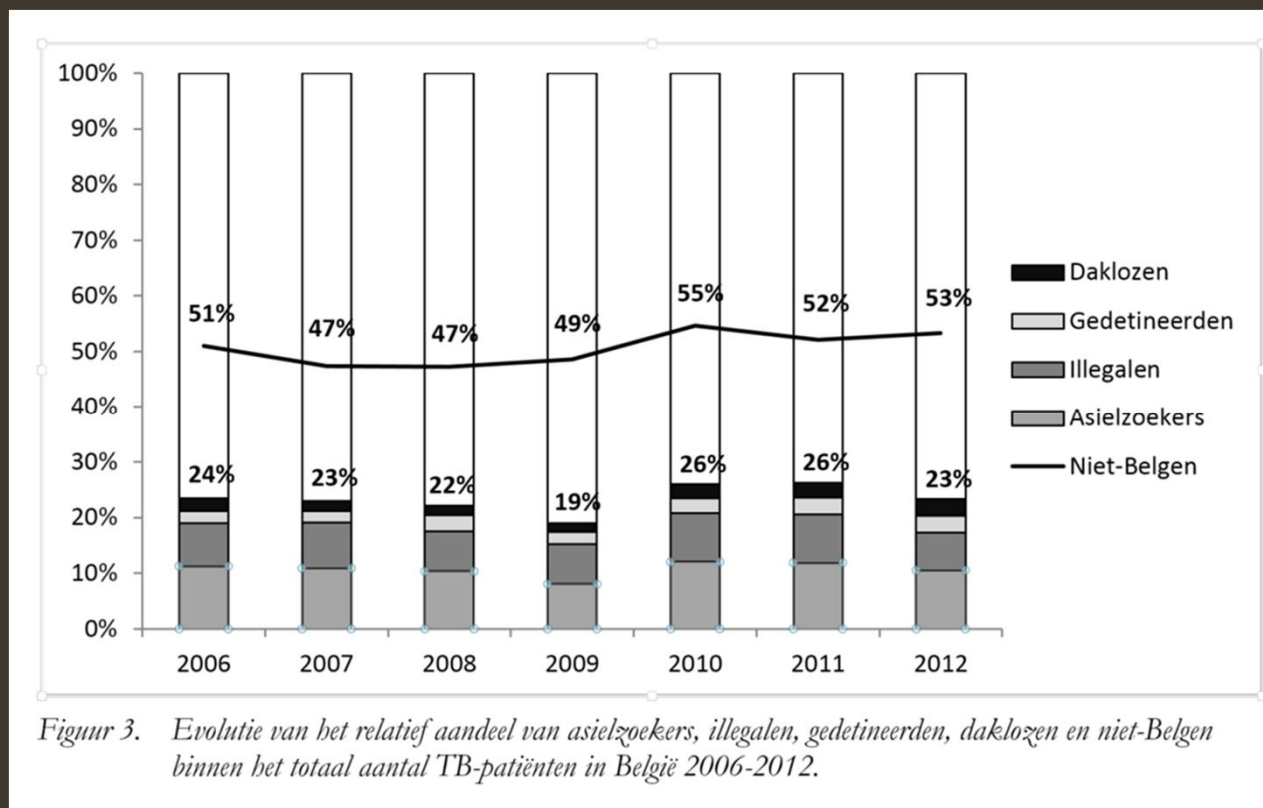


Figuur 1. Evolutie van de door BELTA-TBnet ten laste genomen personen relatief ten opzichte van basisjaar 2009 (dat gelijkgesteld werd aan 100%)

- BeltaTB is better known
- Increasing assistance for
 - Diagnosis
 - Preventive therapie
- Belta TB net ensures access in case of stockout

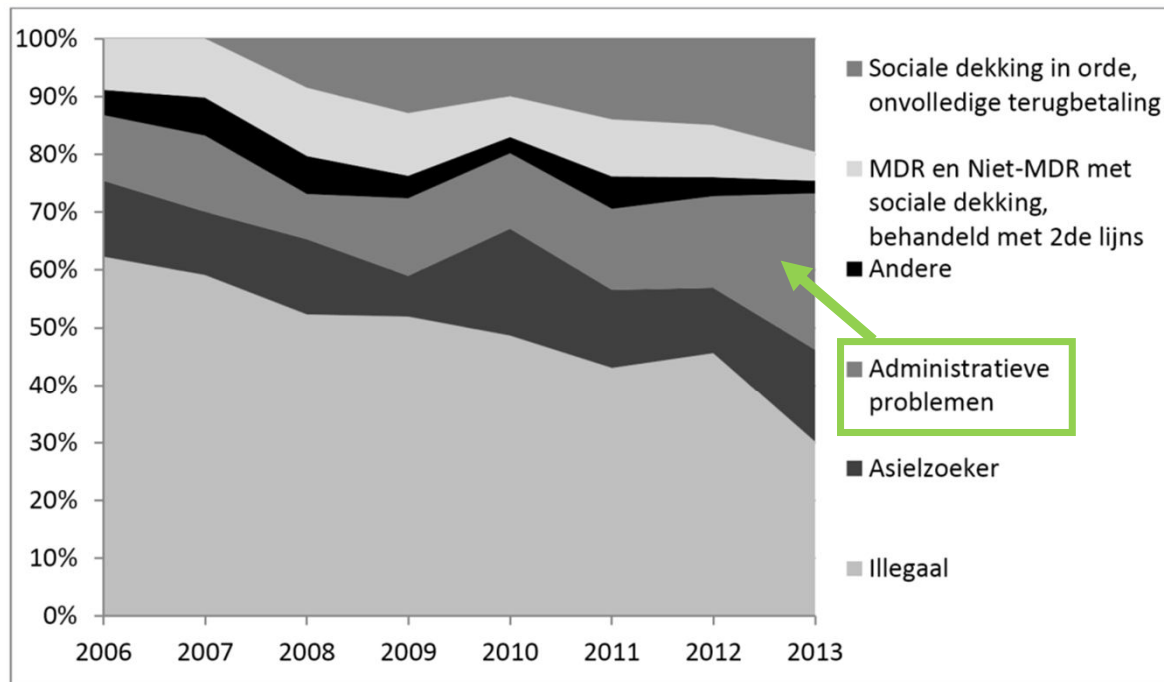
Where does the money go?

- Half of recipients are foreign nationals
- But only 24% belongs to risk population



Figuur 3. Evolutie van het relatief aandeel van asielzoekers, illegalen, gedetineerden, daklozen en niet-Belgen binnen het totaal aantal TB-patiënten in België 2006-2012.

Who gets the money?



Figuur 4. Relatief aandeel van de verschillende categorieën van tenlasteneming 2006-2013. De personen ingeschreven in 2013 omwille van geïmporteerde ethambutol zijn niet meegerekend.

- Increasing number of cases need financial assistance
- More administrative problems

Conclusion

- Dedicated National Organisation & Group of Experts
- Wide access to treatment
- Problem seems stable in numbers
 - As more access is available in country of origin
 - Vigilance is needed
- High cost of treatment
 - Clinical approach → rational
 - Public health response → essential

The infographic features a blue header with six icons in white circles, each with a corresponding label: a factory for 'IDENTIFY THE PROBLEM', a stethoscope for 'STRENGTHEN HEALTH SYSTEM RESPONSE', two hands shaking for 'WORK IN PARTNERSHIP', a microscope for 'DEVELOP NEW TOOLS', a dollar sign for 'MOBILIZE RESOURCES', and an exclamation mark for 'MONITOR TRENDS AND MEASURE IMPACTS'. Below the header, the text reads: 'BEST PRACTICES IN PREVENTION, CONTROL AND CARE FOR DRUG-RESISTANT TUBERCULOSIS' in black, followed by 'BELGIUM' in large red letters, and 'BELTA-TBnet, an example of best practices in the context of MDR-TB management' in red.

IDENTIFY THE PROBLEM STRENGTHEN HEALTH SYSTEM RESPONSE WORK IN PARTNERSHIP DEVELOP NEW TOOLS MOBILIZE RESOURCES MONITOR TRENDS AND MEASURE IMPACTS

BEST PRACTICES IN PREVENTION, CONTROL AND CARE FOR DRUG-RESISTANT TUBERCULOSIS

BELGIUM

BELTA-TBnet, an example of best practices in the context of MDR-TB management