

# The qualification of new blood donors before donation and the Dutch experience: *pros*

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# Agenda

- Definitions donor types
- Sanquin guidelines new donors
- Results screening new donors versus repeat donors
- Conclusion

## Definitions donor type – DOMAINE

- Prospective donor: Someone who states his/her wish to give blood or plasma but is not registered yet
- Newly registered donor: Someone who has been registered as a donor but who has not donated yet
- First time donor: Someone who has made their first and to date only donation within the last 12 months.
- Depending the donation pattern: Regular, returning, lapsing, inactive and stopped donor
- → Repeat tested donor: Donor whose blood/plasma has been tested previously (Plasma Master File Definition)

## New donors at Sanquin

- New donor is a person who never donated blood or plasma
- A new donor in the Netherlands does not donate blood during his/her first visit
- Age of new donors  $\leq 65$  yrs (repeat donors 18-70 yrs)
- Donor recruitment (website/ active recruitment)
- Donor receives two leaflets information for donors and HIV and a request to contact the Blood Bank
- Donor service department: invitation of prospective donor by telephone call:
  - Pre-screening: donor health, general information, voluntary and unpaid, motivation, leaflet on HIV
  - Appointment for first time visit in Blood Bank for pre-donation screening

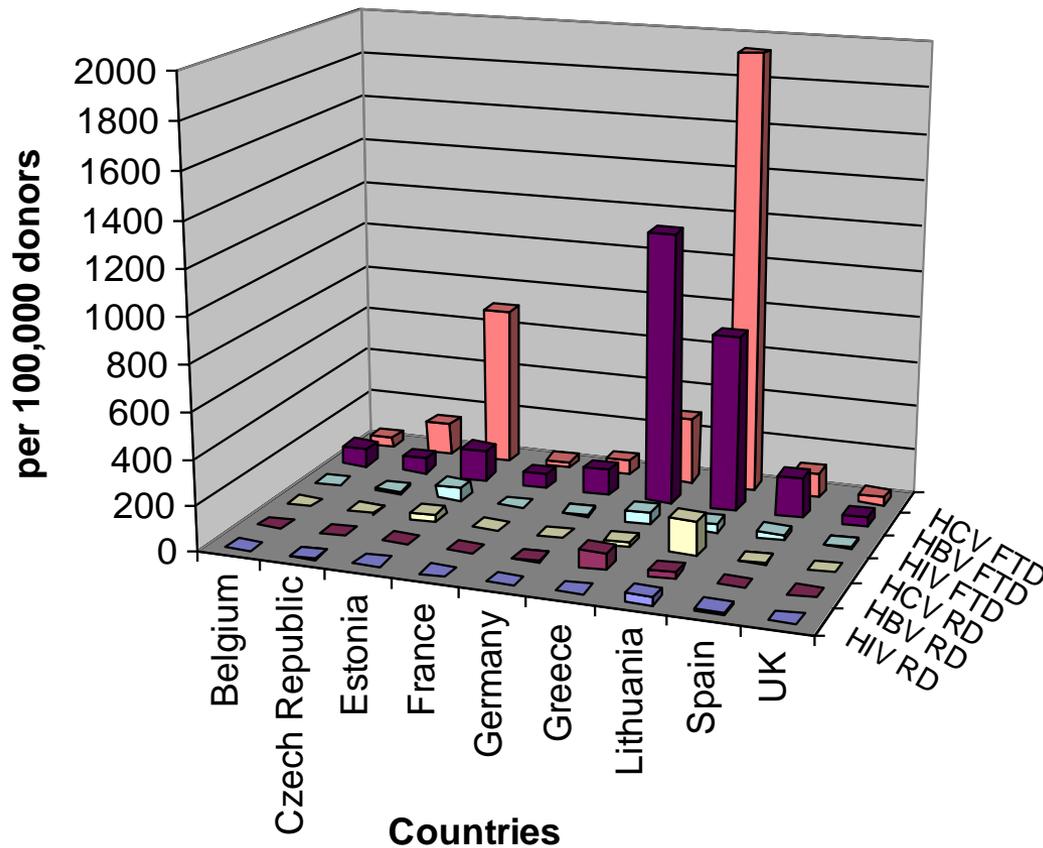
## Pre-donation screening of new donors

- Performed by a donor physician
- Information and advice
- Donor health questionnaire:
  - Focus on blood safety and behavioural risks
  - Donor health assessment
- Donor consent, signed DHQ
- Blood sample for blood group and infections
- When eligible, first donation at least 2 weeks after pre-donation screening

## Testing new donors

- ABO, Rh D
- Phenotype CcEe and K, other antigens
- Erythrocyte antibodies
- Test on TTIs:
  - HBV: HBV DNA, HBsAg, anti-HBcore
  - HCV: HCV RNA, anti-HCV
  - HIV 1/ 2: HIV-RNA, anti-HIV
  - HTLV 1/ 2: anti-HTLV (only new donors)
  - Syphilis: TPHA
  - Malaria: EIA on indication

## First time donors vs repeat donors (CoE)



## Number of (pre)donations

	Tested new donors	Tested donations (repeat donors)
2009	36,146	898,979
2010	37,297	892,779
2011	35,166	890,851
2013	37,468	823,777
Total	146,077	3,506,386

## Confirmed positive test results new and repeat donors

15 occult HBV excluded

	New donors				Repeat donors			
	HBV	HCV	HIV	<b>Total</b>	HBV	HCV	HIV	<b>Total</b>
2009	21	10	-	<b>31</b>	3	-	2	<b>5</b>
2010	18	6	-	<b>24</b>	-	-	1	<b>1</b>
2011	13	7	1	<b>21</b>	4	-	-	<b>4</b>
2012	13	4	-	<b>17</b>	6	-	2	<b>8</b>
<b>Total</b>	<b>65</b>	<b>27</b>	<b>1</b>	<b>93</b>	<b>13</b>	<b>-</b>	<b>5</b>	<b>18</b>

## Acute (incident) infections in new and repeat donors

New donors:

- HBV
  - HBV DNA only
  - +/- HBsAg
  - IgM, if a-HBc positive
- HCV
  - HCV RNA only
- HIV
  - HIV RNA only

Repeat donors:

- All seroconversion, except occult HBV

## Characteristics of new donors with acute HBV infection

Donor	M/F	Age	Ethnicity	Test results	Reported risk
1	F	27	Caucasian	HBV DNA+	New heterosexual partner, ethnicity partner unknown
2	M	33	Caucasian	HBV DNA+	None
3	F	41	Caucasian	HBV DNA+	Partner with various sexual contacts
4	M	34	Vietnamese	HBV DNA+, HBsAg+, a-HBc-	New heterosexual partner from Vietnam
5	F	21	Caucasian	HBV DNA+, HBsAg+, a-HBc-	Sexual contact in Turkey
6	M	24	Caucasian	HBV DNA+, HBsAg+, a-HBc+, core-IgM+	Recent MSM contact

## Seroconversions between pre-donation and first donation

- One donor seroconverted for HIV 29 days after pre-donation screening
- HIV RNA + and a-HIV + (confirmed by immunoblot)
- No archive samples of pre-donation screening, and therefore not tested in ID-NAT
- Donor did not report any HIV-related risk
  
- → Possible risk of window period during pre-donation testing

## Confirmed positive test results new and repeat donors

15 occult HBV excluded

	New donors 146,077 pre-donations					Repeat donors 3,506,386 donations				
	HBV	HCV	HIV	Total	Acute infection	HBV	HCV	HIV	Total	First donation
2009	21	10	-	31	-	3	-	2	5	1 (HIV)
2010	18	6	-	24	3 (HBV)	-	-	1	1	-
2011	13	7	1	21	2 (HBV)	4	-	-	4	-
2012	13	4	-	17	1 (HBV)	6	-	2	8	-
Total	65	27	1	93	6 (HBV)	13	-	5	18	1 (HIV)

## Conclusions

- 93/146,077 (0.064%) new donors tested positive for HIV, HBV or HCV
- 6/93 (6.5%) positive new donors were classified as acutely infected (all were HBV)
- 5/6 donors had a HBV-related risk factor, possibly test-seekers; 1 donor did not report a risk
- Incidence of HBV new donors: **4.11 per 100,000 pre-donations**
- Incidence of HBV repeat donors: **0.37 per 100,000 donations**
  
- During the 4 year period, one observed window period HIV donation was prevented
  
- → Pre-donation screening of new donors reduces the risk of infectious window period donations

## Discussion

- Absence of “HBV seroconversion” at first “real” donation
  - Delay between first contact and first visit/sampling
  - Test seekers, who are still negative at pre-donation, might not return (in 2012, 26% eligible new donors did not return for donation)
  - HBV cleared
- HIV NAT only donations never occurred. Acute infections can not be excluded in new donors (short window period). Incident infections in repeat donors were RNA and antibody positive.
- No acute HCV infections among new and repeat donors. Spread of HCV in the Netherlands has been halted.

Thank you for your attention.