World Blood Donor Day 2010
Banc de Sang I Teixits
June 16, 2010

The Dutch Program for Plasma-Self Sufficiency

Jeroen de Wit
History of the blood organisation in the Netherlands

1925  First donor service in Rotterdam
1940  Fractionation established in Amsterdam and Rotterdam
1946  CLB set up, mobile blood collection activities
1962  Human Blood Act
1973  Central Blood Transfusion Commission's plan for 25 blood banks
1988  Blood Tranfusion Act
1998  1) Blood Provision Act
        2) Collaboration with CAF
        3) A single organization: 22 blood banks and CLB merge into Sanquin
2001  From 9 to 4 blood banks
2010  From 4 regions to 1 Sanquin Blood Bank
Blood Provision Act

Key issues

• One single organisation for Blood Banking, Fractionation, Research and Diagnostic Services
• Not for Profit,
• Volunteer Non-Remunerated Donation
• Ministerial plan
• Sanquin policy plan and budget
• Approval of budget and policy plan by the Ministry of Health
• (integral) Nation-wide prices for blood components
The changes of 1998

Sanquin:

• From 22 to 9 to 4 blood bank divisions
• Uniform procedures, products, quality
• A single computer system
• Integration with Plasma Products, Diagnostic Services and Research
• Co-ordinated logistics (blood bank with the Plasma Products division)
• Coordinated research, from fundamental to applied
• Operational integration with CAF-DCF,
Blood supply in the Nederlands

- Groningen
- Amsterdam
- Utrecht
- Leiden
- Rotterdam
- Nijmegen
- Maastricht

Number of inhabitants: 16,311,700
Surface area: 41,528 km²
Number of hospitals: 124
- General: 116
- University: 8

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Blood supply

- Total number of donors: 404.987
- Number of staff: 2.807 (1.984 fte)
- Donor recruitment, blood collection, testing, component processing, storage
- Supply of cellular blood components and plasma for transfusion to hospitals
- Preparation of pharmaceutical products from plasma
- Diagnostic and pharmaceutical services
- Clinical consulting services to foreign blood organisations
- Research and training
The Sanquin organisation

Executive Board

Corporate staff

- Sanquin Diagnostic Services
- Sanquin Research
- Sanquin Plasma Products
- Sanquin Blood bank Region NO
- Sanquin Blood bank Region ZO
- Sanquin Blood bank Region NW
- Sanquin Blood bank Region ZW

Advisory Boards

- Sanquin Reagentia
- Sanquin Pharmaceutical Services
- Sanquin Gemeenschappelijke Serviceafdelingen
Blood Bank divisions

- Main branch locations (laboratories for processing and testing)
- 321 locations for blood collection: permanent and mobile
Blood Bank divisions

Key data*

Number of donors
- Total: 394,587
- Apherese donors: 336,203
- Whole blood donors: 56,140

Number of donors per region
- Northeast: 101,263
- Southeast: 90,512
- Southwest: 103,694
- Northwest: 96,874

* Based on figures 2008
Donorpanel December 31, 2009

Donors 01-01-2009:   394.587
New donors 2009:     46.805
Returning donors:    15.122
Stopped donors 2009: 51.527
Donors 31-12-2009:   404.987

Net growth of donor population 2009: + 2.6%
Dutch donor population

- About 4% of the population at the age of 18 to 70 year
- 85% Whole blood donors, 15% plasma donors
- Whole blood donors give an average of 1,7 times an year, plasma donors 5 times a year
- The average number of male donors is almost equal to the amount of female donors
- Turnover 10 - 15% per year
Blood Bank divisions

Key data* (2)

- Number of donations total 865,816 (whole blood and apheresis) per region
  - Northeast: 224,256
  - Southeast: 212,071
  - Southwest: 175,993
  - Northwest: 253,496

- Number of blood products
  - Erythrocytes: 225,557
  - Plasma for fractionation: 563,586
  - Fresh frozen plasma: 96,622
  - Trombocytes donor units: 255,920

* Based on figures 2008

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# Donors / 1000 inhabitants

[Bar chart showing the number of donors per 1000 inhabitants for various countries, with Slovenia, Denmark, Austria, and Hungary having the highest numbers, and a lower number for South Eastern Europe countries such as Bosnia / Herzegovina and Romania.

June 16, 2010]
## Number of donations

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole blood</td>
<td>1,7</td>
<td>1,7</td>
</tr>
<tr>
<td>Plasma P</td>
<td>4,8</td>
<td>4,9</td>
</tr>
<tr>
<td>Specific plasma</td>
<td>5,7</td>
<td>5,6</td>
</tr>
<tr>
<td>Anti-D plasma</td>
<td>5,9</td>
<td>7,5</td>
</tr>
<tr>
<td>Q-plasma</td>
<td>6,4</td>
<td>7,1</td>
</tr>
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</table>
Voorraad erytrocytenconcentraaten bij Sanquin

![week 7](chart)

Aantal dagen levering

<table>
<thead>
<tr>
<th></th>
<th>0pos</th>
<th>0neg</th>
<th>Apos</th>
<th>Aneg</th>
<th>Bpos</th>
<th>Bneg</th>
<th>ABpos</th>
<th>ABneg</th>
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</thead>
<tbody>
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<td></td>
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<td></td>
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</tr>
</tbody>
</table>

- **Laag**
- **Matig**
- **Optimaal**
- **Ruim**
Fixed site
Mobile site, Terschelling
The Mobile Vehicle Site (MAL)
Leaflet

ONDERTUSSEN REDT HAAR BLOED HET LEVEN VAN EEN KANKERPATIËNT


Sanquin

Blood is life.
Donor recruitment campagne 2010

Posters
Examples of communications
Donor recruitment

Prognosis Donor recruitment 2009

<table>
<thead>
<tr>
<th>Instrument</th>
<th>New donors</th>
<th>%</th>
<th>costs per donor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Website</td>
<td>15000</td>
<td>35</td>
<td>€ 18,00</td>
</tr>
<tr>
<td>2. Direct Dial</td>
<td>11000</td>
<td>25</td>
<td>€ 7,00</td>
</tr>
<tr>
<td>3. Donor recruits donor</td>
<td>5000</td>
<td>12</td>
<td>€ 30,00</td>
</tr>
<tr>
<td>4. Direct mail campaigns</td>
<td>3500</td>
<td>8</td>
<td>€ 3,00</td>
</tr>
<tr>
<td>5. Student recruiters</td>
<td>2000</td>
<td>5</td>
<td>€ 66,00</td>
</tr>
<tr>
<td>6. Cooperation with police</td>
<td>500</td>
<td>1</td>
<td>€ 16,50</td>
</tr>
<tr>
<td>7. Waiting chambers</td>
<td>500</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>8. World Blood donor Day</td>
<td>500</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>9. Regional Activities</td>
<td>5000</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

June 16, 2010
Sanquin Plasma products

Responsible jointly with CAF-DCF for the production of plasma products from Dutch (310,000 litres) and Belgian (200,000 litres) plasma for the Dutch and Belgian market.

CAF:
• Central Fractionation Department of the Belgian Red Cross
• Sanquin/CAF-DCF integrated management team
• Production facilities in Amsterdam and Brussels (CAF-DCF)
Plasma fractionation process

PLASMA

Cryo precipitate

Aafact® (factor VIII)

Cryo poor plasma

3F-concentrate

Nonafact® (factor IX)

4F-concentrate

Cofact® (Prothrombin complex C1-inhibitor)

Cryo 3F/4F poor plasma

C1-esterase-inhibitor concentrate

Cetor® (C1 inhibitor)

RESIDUAL PLASMA
Plasma fractionation process (2)

RESIDUAL PLASMA

- Paste I
- Paste II + III
- Paste II
- Paste IV
- Paste V

- Powder II
- Immunoglobuline I.V. Nanogam®
- GammaQuin®
- Specific immunoglobulins:
  - GammaQuin®
  - HepBQuin®
  - VariQuin®
  - TetaQuin®
  - RheDQuin®
- Cealb® (albumin 20%)
- G.P.O. (albumin 4%)

Sanquin

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Self Sufficiency for plasma

- Apheresis plasma is used for transfusion as Quarantine plasma
- Male only since 2008 (prevention TRALI)

- 100% of whole blood plasma is recovered and used for fractionation

- The plasmapheresis program is adapted to the total plasma need for fractionation
Self sufficiency for plasma

Calculation of plasma needed for fractionation
On the basis of most needed plasma product
In Dutch hospitals
In open competitive (medicines) market
On basis of real sales
Future: on the basis of total need to comply with reciprocity and European self sufficiency
Surplus products are exported to contribute to optimal use of plasma and cost efficiency
International references

- EU Directive 2002 /98/ EC

- WHO statement on Availability, safety and quality of blood products

- Council of Europe definition of Volunteer Non-Remunerated Blood Donor

- Dublin “Consensus” statement
Thank you for your attention
## Key figures* (1)

**Turnover in € 1000**
- Blood banks: 158.765
- Plasma products: 138.888
- Diagnostic services: 16.990
- Research: 7.677

* Based on figures 2008
## Key figures* (2)

### Balance in € 1000

<table>
<thead>
<tr>
<th>Category</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed assets</td>
<td>126.504</td>
</tr>
<tr>
<td>Current assets</td>
<td>205.853</td>
</tr>
<tr>
<td>Equity capital</td>
<td>201.083</td>
</tr>
<tr>
<td>Provisions</td>
<td>10.159</td>
</tr>
<tr>
<td>Long-term debts</td>
<td>29.791</td>
</tr>
<tr>
<td>Short-term debts</td>
<td>80.490</td>
</tr>
</tbody>
</table>

* Based on figures 2008
Domaine

14 Partners

Co-financiering door EC - EAHCP

Board of advice, incl. EBA European Blood Alliance

Project Management Team
Targets **Domaine**

1. Gathering facts about
   - Donor recruitment & retention strategies
   - Donor population characteristics
   - Attendance rates
   - Deferral procedures, rates and reasons

2. Developing criteria for “Good Donor Management”

3. Disseminate knowledge
Deliverables Domaine

1. Criteria for “Good Donor Management”
2. Reports and scientific articles
3. Training programme for Donor Managers