

Strategic Plan for the re-organization of the Transfusion System in Greece

Hellenic National Blood Transfusion Center (HNBTC)



HELLAS

- Greece is a country with 10,700,000 inhabitants.
- It's divided into 7 Health regions including an extremely large number of islands.
- Greece has 4 Blood Centers and 90 Hospital Blood Banks.



Hellenic National Blood Transfusion Center (HNBTC)

- HNBTC was established in 2005 in harmonization to the Directive 2002/98 EC of the European Parliament and the Council of Europe.
- HNBTC, a Public Legal Entity, is the Competent Authority for Blood & Blood Components, located in Athens under the supervision of Ministry of Health.
- HNBTC supervises 4 Blood Centers, one of them located at its premises, and 90 Hospital Blood Banks.
- HNBTC plans to develop and organize the National Blood Transfusion System through a strategic plan with central management and supervision of all blood services.

The present structure of blood transfusion system

- There are 4 Blood Centers, 3 of them located at public hospitals which are responsible for collection, processing, serology testing, NAT testing, distribution and transfusion.
- One of them is the HNBTC, the only one not located at hospital, that has no collection and transfusion.
- There are 90 Hospital Blood Banks located at public hospitals which are also responsible for collection, process, distribution and transfusion
- NAT testing is performed in 4 BE since 2013
- Serology testing centralization in 4 BE was finalized in July 2017

As is the case in Europe and the USA from the early 2000, the Hellenic Blood System has to be reformed and centralized for the following reasons:

- Scientific
- Management
- Financial

Facts for the Hellenic BTS

- In 1979 paid donation is abolished and Private Blood banks are closed
- Standard needs for patients with thalassaemia 110.000-120.000 U (20%)
- Every year 500-600.000 units of whole blood are collected & approximately equally numbers are transfused
- We have regional & seasonal shortages of blood

What is missing is central organization & management

Variables influencing supply & demand of blood (WHO 2017)

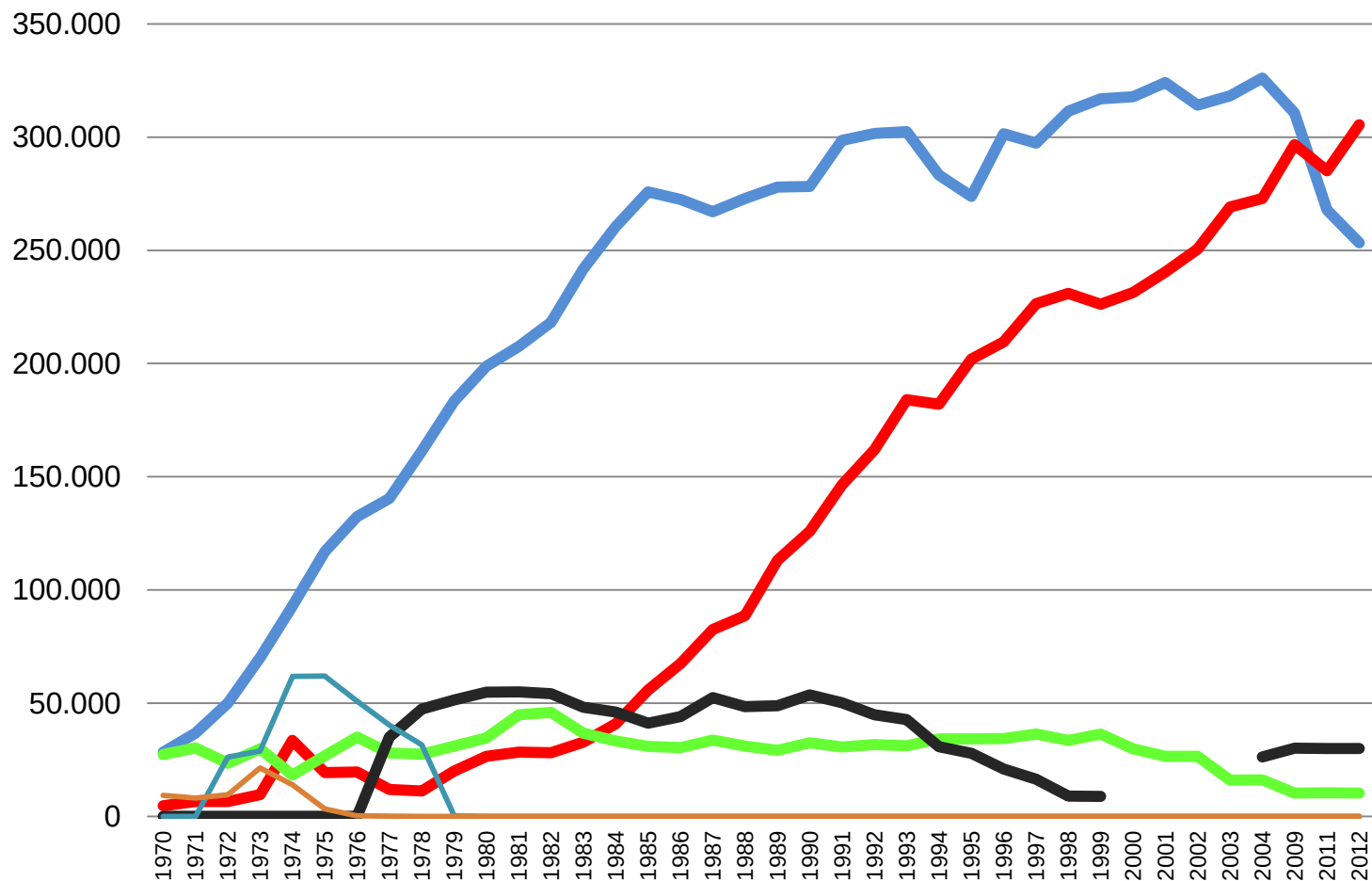
- Geography, population, epidemiological data
- Development of Health System in terms of:
 - prevention : e.g. malaria, anemia
 - diagnosis : e.g. hemophilia, hemoglobinopathies
 - treatment : specialized medical approaches & surgical procedures
- Accessibility to Health Care
- Development of Transfusion Services

What seem to be the problems

- A fully intergraded IT system not in place (vein- to vein)
- Still a high percentage of replacement donors (36%)
- The National Blood Donor Registry not completed
- Non central coordination of blood drives
- We don't have a common national program for recruiting blood donors

= Highly decentralized system

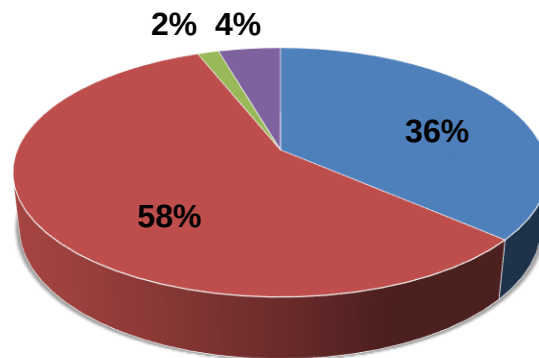
Blood collection Source 1970 - 2012



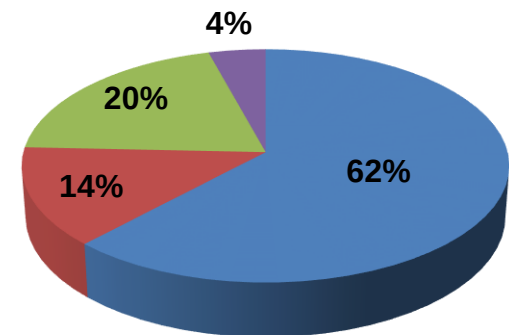
- Replacement Donations
- Voluntary Blood Donations-
- Paid Donations abolished in 1979

- Armed Forces
- Swiss Red Cross

Blood donations / transfusions Greece 2016



- Volunteer donations
- Replacement donations
- Swiss Red Cross
- Armed Forces



- Public hospitals
- Thalassaemia patients
- Private clinics
- Discarded units

Greece 2016

Collected Units

Replacement donations	211.781
Voluntary donations	334.564
SRC	25.913
Armed Forces	8.861
Total	581.119

Transfused Units

Patients except Cooley	344.400
Thalasasemia patients	111.628
Private clinics	76.209
Total	532.237

Which is the case in Greece ?

- Population 10.7×10^6
- In 2016 : 555.200 U WB (>5% population)
- In 2013 estimated volunteers 352.000 (> 3% population)
- Blood shortage = collection < 20 U/ 1000 inhabitants
- Collection > 36,4 U/ 1000 inh. is considered sufficiency (WHO Algorithm)

WHO Blood Collection & GDP , Greece in the 1st place with 58.8 U /1000 ...

There will be blood

Blood donations and GDP per person
2013

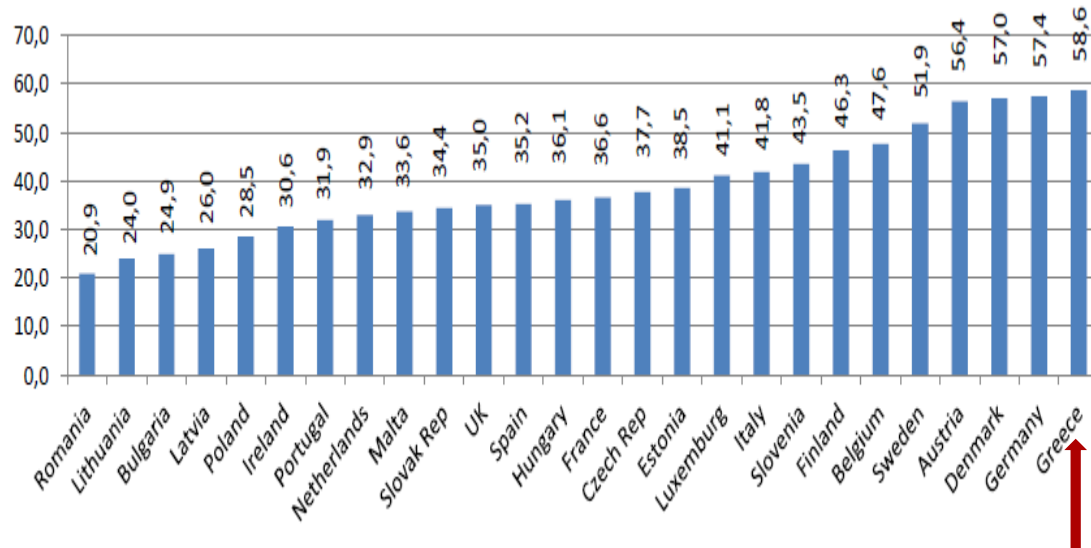


Where is the problem ?

- Lack of central coordination & management of blood collection and use
- Still a remarkable number of replacement donors
- Lack of a national program for rational blood and blood component use (PBM)

Red cell concentrates per 1000 inhabitants, EU26

.....Greece in the 1st place with 58.6/1000 inh



What to do ?

A Strategic Plan of HNBTC for the reform of National Transfusion System

1. Further integration into 2 Blood Centers with full function
 - 1 in Athens , in HNBTC
 - 1 in Thessaloniki (out of hospital)
2. Centrally organized Blood Collection (from the BCs) with
 - Mobile drives &
 - Constant blood donation sites, out of hospitals
3. Forecasting & Replenishment Program to define the demands and supply of the hospital blood banks
4. Integration of the vein to vein IT System
5. National Program for Volunteer Blood Donors recruitment

What to do ?

A Strategic Plan of HNBTC for the reform of National Transfusion System

6. “Blood drive teams” with constant, , devoted, well trained staff, to be employed mostly in blood collection
7. Donor blood group testing performed in the Blood Centers
8. Blood processing :
 - In 2 Centers automated (adequate equipment)
 - In 5 Blood Banks in big University Hospitals covering actually the large Health Regions
 - (Crete = Heraklion, Epirus = Ioannina, Thessaly = Larissa, Peloponese = Patras, Thrace = Alexandroupolis)

These BB will retain blood collection & processing
9. Collection – Transport – Distribution of samples & components from the Blood Centers to the Hospital Blood Banks & vise versa, performed with Blood Centers’ fleet of vans fully equipped

The loss of not integrated blood processing

1. Uniform, high quality products not available around the country (leukoreduced, inactivated)
2. Only 35% of Whole Blood collected is used to prepare Platelet Concentrates
3. To meet the needs of hemato-oncology & cardiac-surgery patients a large number of Platelet Apheresis are performed with a remarkable cost
4. Special groups of patients (transplanted, immunocompromised, thalassaemic) are transfused with leukoreduced components, prepared in individual Hospital Blood Banks at high cost
5. The cost of preparation of leukoreduced products & apheresis platelets is estimated approximately 11×10^6 €/y , 9 of them in the Health Regions of Attica (1st, 2nd) & Macedonia (3rd, 4th)
6. Central processing of 150.000 out of 550.000 units WB collected would save about 10 million € yearly ensuring higher quality, uniform products all over the country & sufficient platelets for special patients

The new role for the Hospital Blood Banks

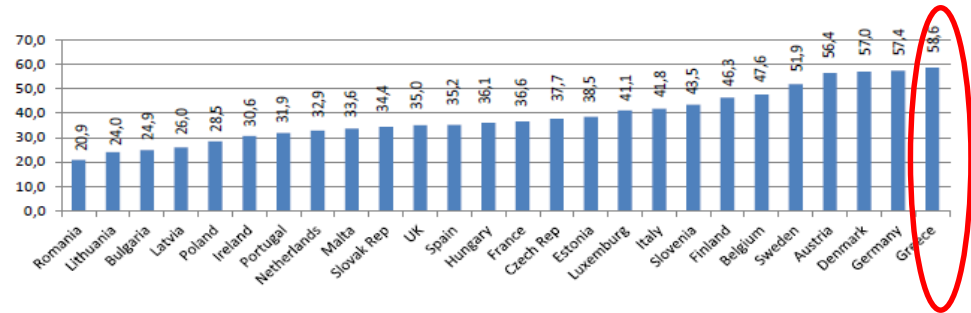
- Patient Blood Management
- Safe Transfusion
- Haemovigilance

Patient Blood Management

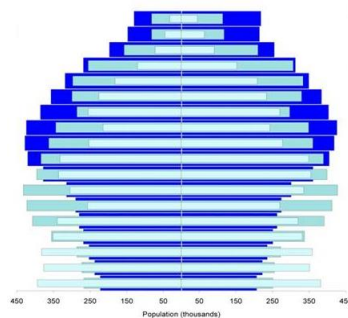
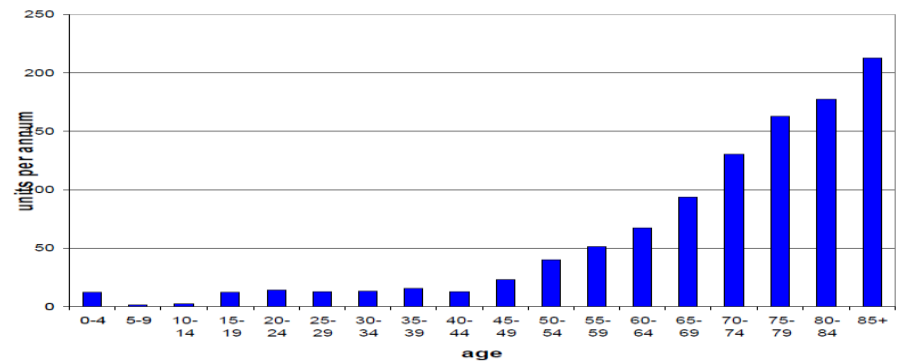
Why?

- defines the patient who may need transfusion
- interdisciplinary, multi-factorial yet personalized approach
- decrease the needs for allogeneic transfusion

1. TRANSFUSION RATE : Higher than considered



2. DEMOGRAPHIC problem



Rapid increment of population aged > 65 y and decrease of population 17-65 y aged

- Decrease of donors
- Increase of population in transfusion need

Patient Blood Management

Why?

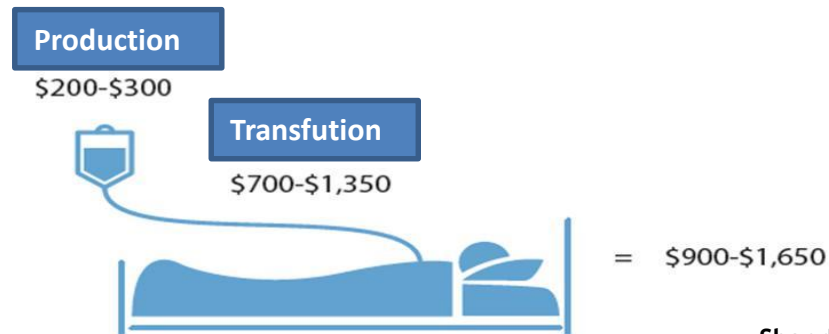
3. RISKS : Higher than estimated

Category	Risk/ product transfused
Overall death risk	1 in 125.000
Overall risk of highest morbidity	1 in 19.157
Death risk from error	1 in 454.545
Highest morbidity risk from error	1 in 196.078
Death risk from TACO	1 in 227.273
Highest morbidity risk from TACO	1 in 81.300
Highest morbidity risk from Acute Hemolytic reaction	1 in 36.764

Category	Risk of transfusing an infected unit
HBV	1 in 1.3 millions
HCV	1 in 28.6 millions
HIV	1 in 7.1 millions

4. COST: High & getting higher

(SHOT July 2014)



Shander A Transfusion. 2010 Apr;50(4):753-65

Where we stand ?

1. Serology Testing integration, completed July 2017, savings 15 million € per year
2. Pilot Forecasting /Replenishment Program in Attica (45% of blood collection & transfusion), about to start
3. Donors' blood grouping integration at first in Attica, tender pending, 2018
4. Integration of blood collection, performing centrally organized Bloods Drives, pilot in Attica, 2018
5. Integration of Blood Processing for 100.000 units WB, pilot in Attica, tender pending, 2018
6. Activation of Hospital Transfusion Committees to implement PBM program, starting in 2018
7. National Campaign for donor recruitment starting with the WBDD 2018, hosting country Greece

How ?



Communication



Strategy



Team work

Thank you!