Blood safety in Africa: Progress made during the last decade and major challenges for the Future

By

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Outline

- Introduction: WHO resolutions
- African context
- Organization and funding
- Blood donor mobilization and blood collection
- TTIs screening and evolution of markers in donated blood
- Main challenges
- Proposed actions
May 1975: WHA28.72: urges Member States:
(37 years ago)
- To promote development of National blood transfusion services based on voluntary non remunerated donation of blood;
- To enact effective legislations governing the operation of blood services and to protect the health of blood donors etc.
Regional Committee resolutions

- September 1994 (18 years)
  AFR/RC44/R12

Urges Member States to:

- Take urgent steps to **enact blood safety policies**;
- Mobilize **resources** for BTS infrastructures development **at central and district hospitals**;
- Ensure adequate provision of **HIV negative blood for transfusion**

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Regional Committee resolutions

- **August 2001: AFR/RC51/R2**
  - Adoption of the **Regional Strategy for blood safety**
  - 3 objectives
  - 4 targets for 2012 and
  - 9 priority interventions
Main objectives

- To assist the countries to set up an effective system of recruitment of low-risk blood donors;
- To improve the safety of blood and blood products by implementing quality assurance programmes etc.
- To promote the appropriate clinical use of blood and blood products by clinicians
Stratégie régionale: cibles pour 2012

- All the Member States will have carried out a **situation analysis**;
- At least 75% of countries will have **adopted and will be implementing** their blood transfusion policy;
- **100% of the blood** units transfused will be **screened** for all TTIs;
- At least **80%** of blood from **VNRBD**.
Africa population and blood needs

- Population of Africa: 956,688,224 (UNDP 2010)
- Population WHO/AFRO Region
  - 836,969,536 (UNDP 2010)
  - 75% leave in rural area
- Annual needs of blood
  - 8,369,000 units
- Collection per year
  - Around 4,000,000 units

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WHO AFRO Sub Regions

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Malaria

- 300 Millions cases/year in the world
- 1 million of death/year
- 90% of deaths in Sub-Saharan Africa
Global HIV Prevalence in 2010

Source: UNAIDS
VIH prevalence among women attending ante natal clinics in Sub Saharan Africa 2007-2010*

- **Southern Africa**: 2.8% in Angola to 39% in Swaziland; **median**: 17.2%
- **East Africa**: 2% in Eritrea to 7% in Uganda); **median**: 4%
- **Central Africa**: <0.01% in STP to 7% in Equatorial Guinea; **median**: 5%
- **West Africa**: <0.01% in Algeria to 3.7 in Liberia; **median**: 2.2%


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Hepatitis B Prevalence

Sub Saharan Africa is a high endemic area prevalence $\geq 8\%$)

Source: WHO 2004
Maternal mortality ratio per 100,000 live births in 2008

Maternal mortality

Distribution of maternal deaths by WHO regions in 2008

Of 358000 maternal deaths in 2008,

- **190000 (52%)**: Africa.
- **91000 (25%)**: South East Asia.
- **52000 (15%)**: Eastern Mediterranean.
- **13000 (4%)**: Western Pacific.

Causes of maternal deaths, African Region, 2008

- Abortion, 14%
- Obstructed labour, 5%
- Hypertensive disorders, 9%
- Maternal sepsis, 12%
- Maternal haemorrhage, 24%
- Other maternal conditions (Malaria, HIV, Anaemia), 37%

Human made disasters
National policies and legislations in 36 AFRO countries

- **30 countries out of the 36** that responded had conducted a situation analysis;
- **29 countries had adopted and were implementing** their policies;
- **11 countries had a legislation**, but only 9 countries were implementing;
- **23 countries out of 36** had a quality manager.
- 40 countries have a NBTS
- No NBTS in
  - Angola
  - Cameroun
  - Comoros
  - Equatorial Guinea
  - Liberia
  - Seychelles
Funding of national blood programmes 1/2

- **Government funding**
  - Algeria: *100% by the government*;
  - Benin USD: 1 380 000 (0.75% of MOH budget)
  - Congo USD: 2.333.333 (1.18% of MOH budget)
  - Mali USD: 1,970,794. (0.84% of MOH budget)
  - Rwanda: USD 650,000 (15% of MOH budget)
  - Senegal: USD 220 000 (0.1% of MOH budget)
  - Togo: 666.667 USD (0.73%) etc.

- **Cost recovery** (E.g. Cote d’Ivoire)
Funding of national blood programmes 2/2

**Partners** (PEPFAR, LUX Dev, EU, AFD, BAD IFRCRCS, DFID, World Bank, etc.).

- Initially reagents mostly HIV kits 1980-2000
- Today evolution towards funding of national blood programmes including
  - Development and implementation of policies
  - Infrastructures (refurbishment, constructions)
  - Equipment
  - Running cost
  - Training etc.
Burkina Faso CRTS Bobo Dioulasso
NBTS and RBTS in Burkina Faso
Le C.N.T.S. at your service in Togo
NBTS Tanzania 2/2
Blood donation in Africa

- Sensitization
- Mobilization
- Of the population
- for blood donation
- Creation of
- Directorate
- special unit
Mobilization recruitment and retention of blood donors

- Celebration of the **WBDD**
- Mobilization of the **youth**
WBDD celebration in Tanzania (Mbeya)
Progress in blood collection in the AFRO Region
Total donations and family replacement donations
Blood donation rate per 1000 population

AFRO

Blood donation rate per 1000 population

AFRO

Blood donation rate per 1000 population

AFRO

Blood donation rate per 1000 population

AFRO

Blood donation rate per 1000 population

AFRO
Achievement of the regional target on VNRBD

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Blood collection in CRTS BOBO in BURKINA Faso: evolution from 1999 A 2011
Evolution of blood collection in Togo from 2005 to 2010

- **CNTS Lomé**
  - 2005: 10,082
  - 2006: 12,991
  - 2007: 14,816
  - 2008: 19,184
  - 2009: 21,631
  - 2010: 24,417

- **CRTS Sokodé**
  - 2005: 3,932
  - 2006: 4,482
  - 2007: 4,222
  - 2008: 4,768
  - 2009: 6,250
  - 2010: 6,635

*Numbers represent units of blood collection.*
Evolution of blood Collection in Algeria

- **Bar Chart**
  - **X-axis**: Year (1999-2010)
  - **Y-axis**: Number of blood packs
  - **Legend**:
    - DON TOTAL
    - DVNR

- **Data Points**
  - 1999: DON TOTAL (250,000), DVNR (50,000)
  - 2001: DON TOTAL (250,000), DVNR (50,000)
  - 2004: DON TOTAL (300,000), DVNR (100,000)
  - 2006: DON TOTAL (350,000), DVNR (150,000)
  - 2007: DON TOTAL (350,000), DVNR (150,000)
  - 2008: DON TOTAL (400,000), DVNR (200,000)
  - 2010: DON TOTAL (450,000), DVNR (250,000)
Evolution of blood collection in Kenya from 2003 to 2010
MOBILE COLLECTION VEHICLE

PROSPECTION VEHICLE
Blood collection facilities
Evolution of HIV positivity

% of donations with reactive/positive results in HIV test: 2000-2010 (AFR)
EVOLUTION of HIV PREVALENCE in BOTSWANA and COTE D'IVOIRE

PREVALENCE

2003  2004  2005  2006  2007  2008  2009  2010

Années

Botswana
Cote d'Ivoire
Evolution HBV positivity

% of donations with reactive/positive results in HBV test: 2000-2010

- 25% quartile
- Median
- 75% quartile

Years:
- 2000/01
- 04/05
- 2006
- 2007
- 2008
- 2010

%
Evolution HCV positivity
Evolution syphilis positivity

% of donations with reactive/positive results in syphilis test: 2000-2010 (AFR)
Evolution de la sérologie des marqueurs viraux au CNTS de Lomé 2006-2010
Blood Component preparation: Bobo Dioulasso, Burkina Faso
Storage of blood and blood products
Clinical use of blood
Guidelines on clinical use of blood: consensus workshop in Namibia
HEMOVIGILANCE

HAEMOVIGILANCE FORM

ENVELOPPE A FICHES POST-TRANSFUSIONNELLES

16/11/2005

16/11/2005

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Challenges 1/4

- Blood Transfusion is **not a National Priority**
- Lack of good **governance**
- Absence of laws ad regulations and lack of standardization
- Dependence on external funding
- Lack and inequitable distribution of qualified staff
- Lack of Carrier perspectives;
Challenges 2/4

- Lack or inadequate Infrastructures
- Inadequate equipment (Cold Chain; automates)
- Inadequate provision of electricity
- Concentration of services and qualified staff in urban areas;
- Acute shortage of blood in rural areas
- Poor data collection systems (IT systems)
Challenges 3/4

- **Insufficient collection** of blood compared to the needs
- **Low donor retention rate**
- **Dependence on family replacement donations** (>50% in 20 countries)
- **High TTIs prevalence** in donated blood
- **Frequent stock out of reagents and consumables**
- **Poor quality management programmes.**
Challenges 4/4

Poor management of waste
Proposed actions 1/4

- At political level
  - Blood safety should be considered as a **National Priority**
  - Enact and enforce **laws and regulations**
  - **Increase the budget** allocated to blood transfusion
  - Include **sustainability component in project** funded by partners (government commitment?)
  - Improve **managerial** skills of technical and BTS cadres
Proposed actions 2/4

- Blood donation
  - Disseminate/share success stories on donor mobilization and donor recruitment
  - Implement **proven strategies** to retain VNRBD
  - Develop and implement **innovative strategies to convert family replacements donors into VNRBD**;
  - Introduce regular monitoring and evaluation systems.
Proposed actions 3/4

Blood screening

- Standardize TTIs screening strategies in countries and establish **confirmatory testing** for all positive samples;
- Establish criteria for reagent selection and procurement and establish reliable systems to prevent stock out;
- BTS to participate in EQAS
- Storage and distribution of blood
  - Ensure maintenance and regular control of the blood cold chain
Proposed actions 4/4

- Rational use of blood
  - Establish hospital transfusion committees
  - Improve blood delivery and storage systems
  - Implement hémovigilence systems
  - Participate in public health campaigns for prevention of anemia and traffic accidents

- Train staff (initial and continuous)
Training and staff management

- Build teams
- Train staff
- Right persons at the right place
- Motivate staff
SANBS training Centre
Conclusion 1/2

- Tangible progress have been made but the situation is far from the targeted expectations in many countries;
- Need for strong and permanent government support and commitment;
- Development of innovative strategies adapted to local situation;
- Improve quality.
Conclusion 2/2

- Need for **good governance**;
- Regular monitoring and evaluation followed by corrective actions when necessary;
- **Always keep patient interest and safety in our mind.**
Partners supporting blood safety programmes in Africa

- IFRCRCS
- EU
- CDC (PEPFAR)
- EFS
- AFD
- DFID
- GTZ
- Lux Development
- Fond Mondial
- Institut Pasteur
- Sanquin consulting services
- AABB
- Croix Rouge Suisse
- Banque Mondiale
- BAD
- Collaboration Sud Sud
- etc.
Acknowledgement

- All NBTS directors of the WHO African Region
- Ministries of Health
- All our partners and collaborators
THANK YOU