Historically we aim at high levels of safety, regarding blood and infectious agents. Too high sometimes?

- It appears that new safety measures do not replace old safety measures, they accumulate.
  - screening or deferral for agents that are inactivated or removed
  - multiple screening assays for 1 agent

- It is unclear why preventive costs in this field are allowed to be relatively high.
  - HTLV donor screening in NL: 1 QALY = € 45,182,666*
  while universal rotavirus vaccination is considered too expensive.

It may be unethical to spend money on the prevention of very small risks. eg: by allowing safety measures to accumulate

- 'Maximal safety' seems desirable, but -in my opinion- does not exist, and therefore can be misleading, as it precludes 'optimal safety'.
  eg: routine NAT screening is maximum safety? No: pooled → ID → higher input → more primers → test twice → ...

- Optimal safety should be our goal, also in terms of cost-effectiveness.
  semantics: optimal is better than maximal, also regarding safety

universal aHTLV screening once leukodepletion takes place

- HTLV is cell-bound (eg: no transmission via FFP)
  even before the introduction of leukodepletion:
  - only 9 - 63% of HTLV positive RBCs transmitted HTLV
  - to my knowledge: 1 report of transfusion induced HTLV disease

- Current costs of HTLV screening in NL: 2
  - all donations: 45,200,000 / QALY
  - new donors: 2,230,000 / QALY
  - only for ped.patients: 27,000,000 / QALY

- Leukodepletion 'may be as effective as screening' 3
  → let's do our homework

1Gout ea: Rapid development of myelopathy after HTLV-I infection acquired by transfusion during cardiac transplantation. NEJM 1990;322:383–388
2Borkent-Raven ea, Transfusion 2012, see slide 2.
3Wenz ea: Leukocyte reduction and HTLV-I: is the glass half empty or half full? Blood 2003;101:370
**safety measures to be abandoned?**

### donor deferral questions

dealing with extremely small risks

- **eg: 6 mo deferral after endoscopy**
  consider:  
  - the endoscope probably was clean  
  - even 'unclean' scopes hardly are infectious  
  - donor is screened (HBV NAT window is 23 days avg)  
  - less risky than matrimonial sex  
  → benefit/costs ratio approaches 0; abandon or reduce deferral period?

- **eg: plasma donor and enveloped emerging viruses**
  consider:  
  - a priori chance of returning infected donor is low  
  - WNV, dengue, chikungunya are enveloped, inactivation can be relied upon  
  → benefit/costs ratio approaches 0; abandon?

- **eg: exclusion of MSM as plasma donor**
  consider:  
  - if in NAT-negative window: extremely low viral load, inactivation can be relied upon  
  → allow MSM as plasma donors?

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**safety measures to be abandoned?**

### recipient tracing in case of a seroconverted donor with negative repository ID-NAT

**Sofar** - to my knowledge - a very small contribution to safety:

UK¹ and NL² analyses of look-back exercises only found transmissions from the ID-NAT positive pre-seroconversion donations.

**Intermezzo:** compare this 'small statistical risk' with 'unknown, possible risk':

Example of an 'unknown, possible risk':
- Should Dutch donors, donating in the area previously affected by very large Q-fever outbreaks (≥ 10% infected), now be screened for incubating chronic Coxiella infection?
- Maybe small, theoretical risks should be neglected until in real life accidents do occur?

anti-HCV screening while screening for HCV-RNA

- After the introduction of screening for HCV-RNA, anti-HCV screening was continued.
- The yield of anti-HCV screening shrank to:
  - detection of resolved HCV infection = detection of risk behaviour
  - detection of HCV-PCR negative HCV mutants
  - detection of atypic (low-level) HCV infection
  - fail-save test for HCV-NAT
- Does the yield of anti-HCV screening justify continuation?
  - more homework to do

safety measures to be simplified?

country-specific deferral for EIs for travelling, returning donors

Considering emerging WNV, dengue, chikungunya, RFV, CCHF, lassa, X:
- Reports on emerging viruses abroad may be late, incomplete, or absent.
- NL: officials at collections centres struggle with lists with countries and agents, which together practically cover the entire globe, outside the EU:
country-specific deferral for EIs
for travelling, returning donors

Regarding emerging WNV, dengue, chikungunya, RFV, CCHF, lassa, X:

- simply defer each donor, returning from outside of EU, for 4 weeks.
- not applicable for malaria, etc.

safety measures to be simplified?

HBsAg screening
once HBV-DNA and anti-HBcore have been implemented

history of HBV screening in the Netherlands:
1973 : HBsAg
2008 : HBsAg + HBV-DNA
2011 : HBsAg + HBV-DNA + anti-HBcore + anti-HBs

Which persons are HBsAg positive, while HBV-DNA and anti-core negative?
- recently vaccinated person (no problem, no HBV infection).
- recently HBV infected person, swallowing lots of tenofovir?
  anti-core is not yet pos, HBV-DNA is suppressed. (Theory).
- HBV and HIV co-infected patient,
  who lost anti-core because of HIV infection,
  and whose cART effectively suppresses HBV-DNA.
HBsAg screening
once HBV-DNA and anti-HBcore have been implemented

HBsAg screening can be abandoned, provided that:
- we don't need HBsAg as a fail-safe test
- many regulations have been modified
  eg: your SOPs, EU pharmacopeia, etc.

Safety measures to be abandoned?

Summary

- introduction of new safety measures is not a license for accumulation of safety measures.

- Introduction of NAT necessitates evaluation of HBsAg and anti-HCV.
  - was serology quietly promoted to a fail-safe procedure?
  - would additional serology have been introduced if NAT would have been implemented first?

- Regarding risk: very small risks ≠ unknown risks
  a very small risk (endoscopy) may be neglected more easily than an unknown, hopefully small risk (prions)
safety measures to be abandoned?

some contemplation

- to stop good old safety measures is frightening and takes courage

- don’t stop outdated, ineffective procedures bluntly,
  but reallocate the money involved to more fruitful procedures:
  by doing so you improve the safety of blood.

Sanquin - BOI
Amsterdam NL
B.Hogema
M.Molenaar
M.Molier
E.Slot
M.v.d.Klundert
H.L.Zaaijer