Specific Challenges of the HIV Epidemic in Romania

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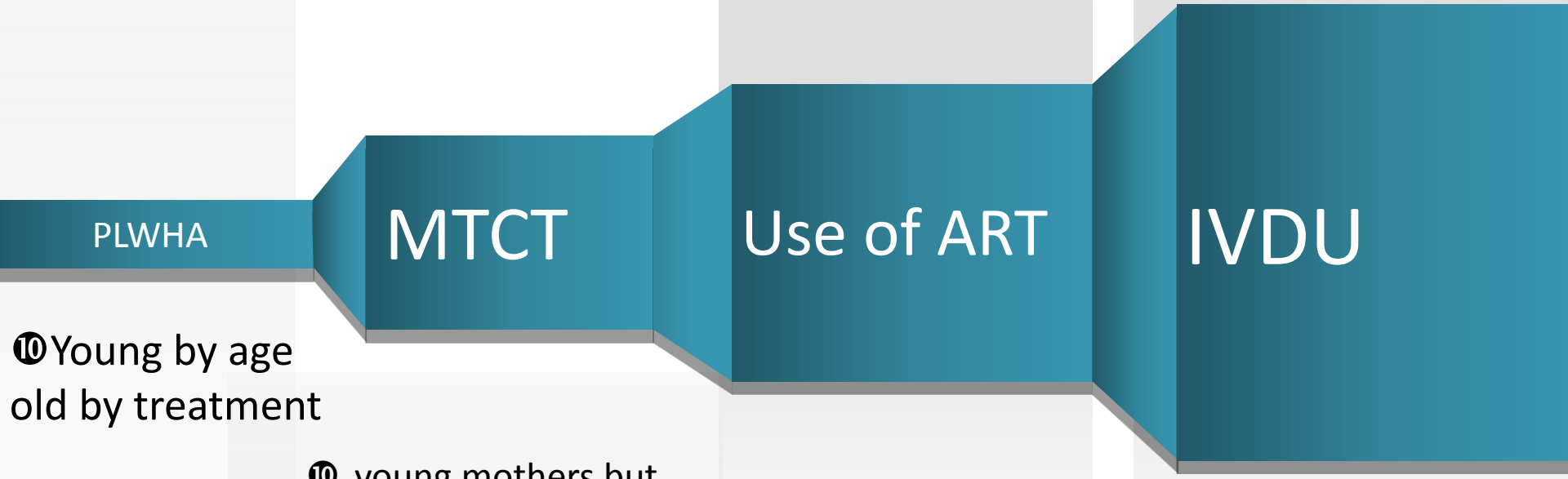
Romania

Challenges 2013



- Young by age old by treatment
- Therapeutic fatigue

- young mothers but poli experienced to HAART
- UNK positive mothers screen and treat

Treatment as prevention

Legal drugs …

here

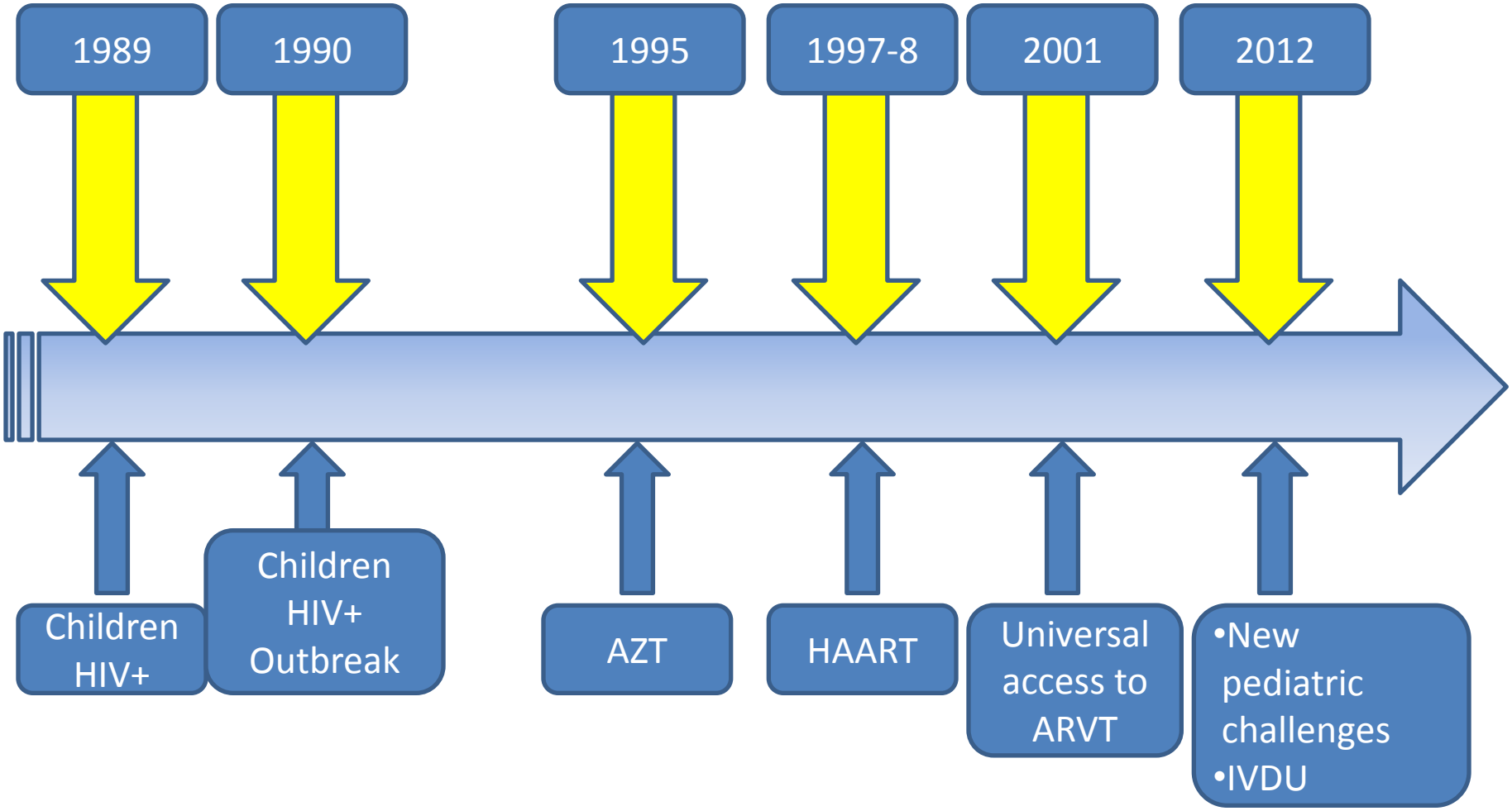
Patching together the history of the HIV epidemic in Romania

- **1985- 1989:** 23 reported AIDS cases, all adults
- Jul. 1989- Dec. 1990 →
  - **1090 pediatric** AIDS cases identified
  - **97% <3 years**;
  - 62% living in institutions
- An estimated **10,000 children** infected

In Dec 1990 the cumulative number of AIDS pediatric cases in Romania > cases reported from all the other countries in the WHO European region combined

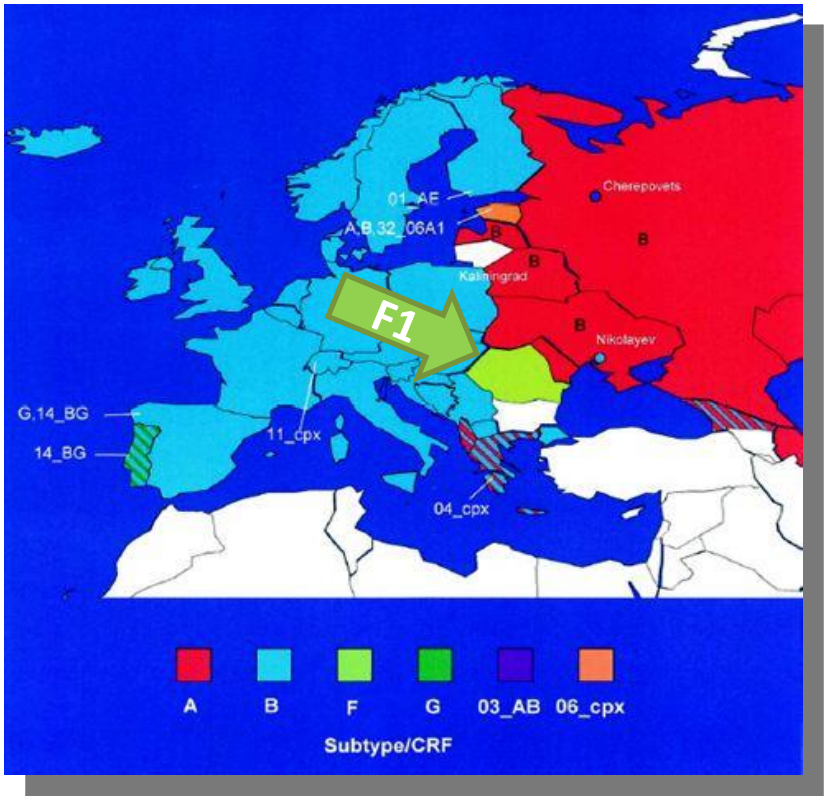
Hersh et al. Lancet 1991; WHO Report Wkly Epidemiol Rec 1991; Mbisa et al. AIDS Res Human Retrovir, 2012

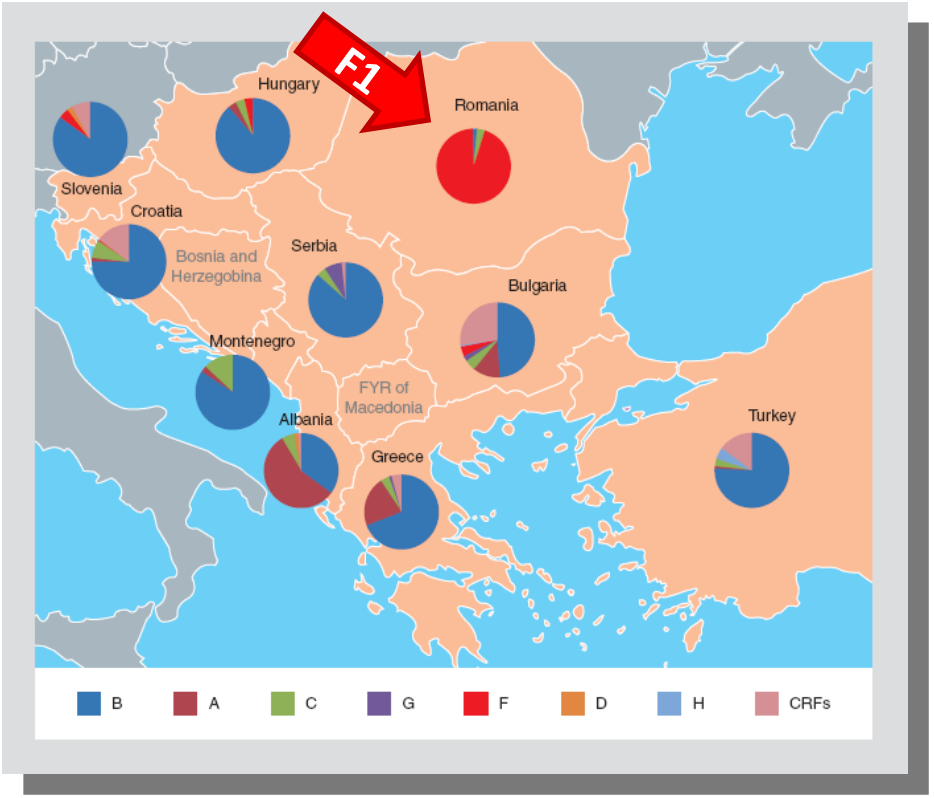
Pediatric Milestones



HIV subtype: F predominance, unique in Europe

"1987-1990 cohort" children: homogenous F1 subtype of HIV





Thomson and Najera, JID, 2007; Stanojevic et al. AIDS Rev 2011; www.cnlas.ro

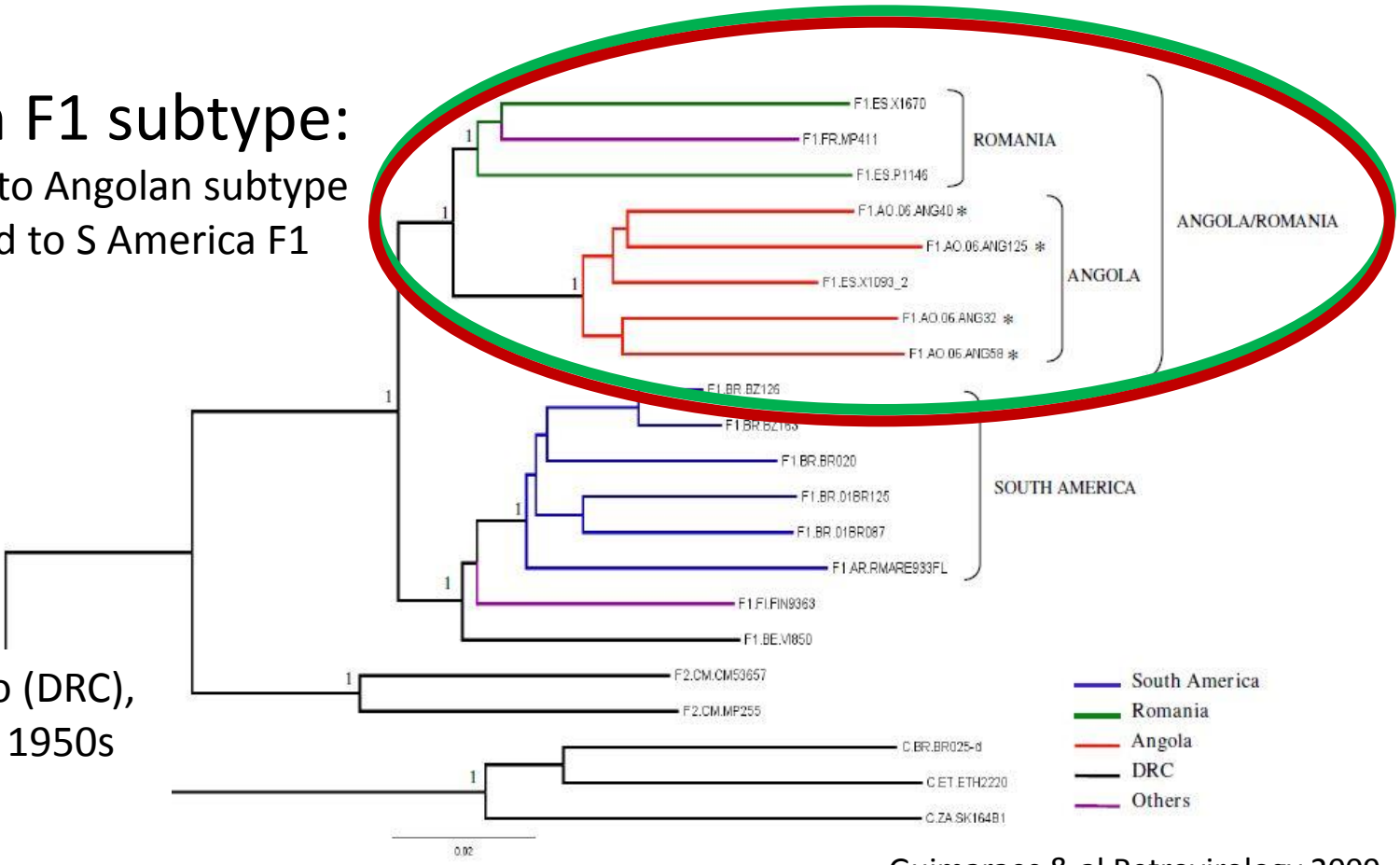
Phylogenetic analysis of HIV-1 subtype F1 isolates

F= <1% HIV infections worldwide: Africa & South America

Romanian F1 subtype:

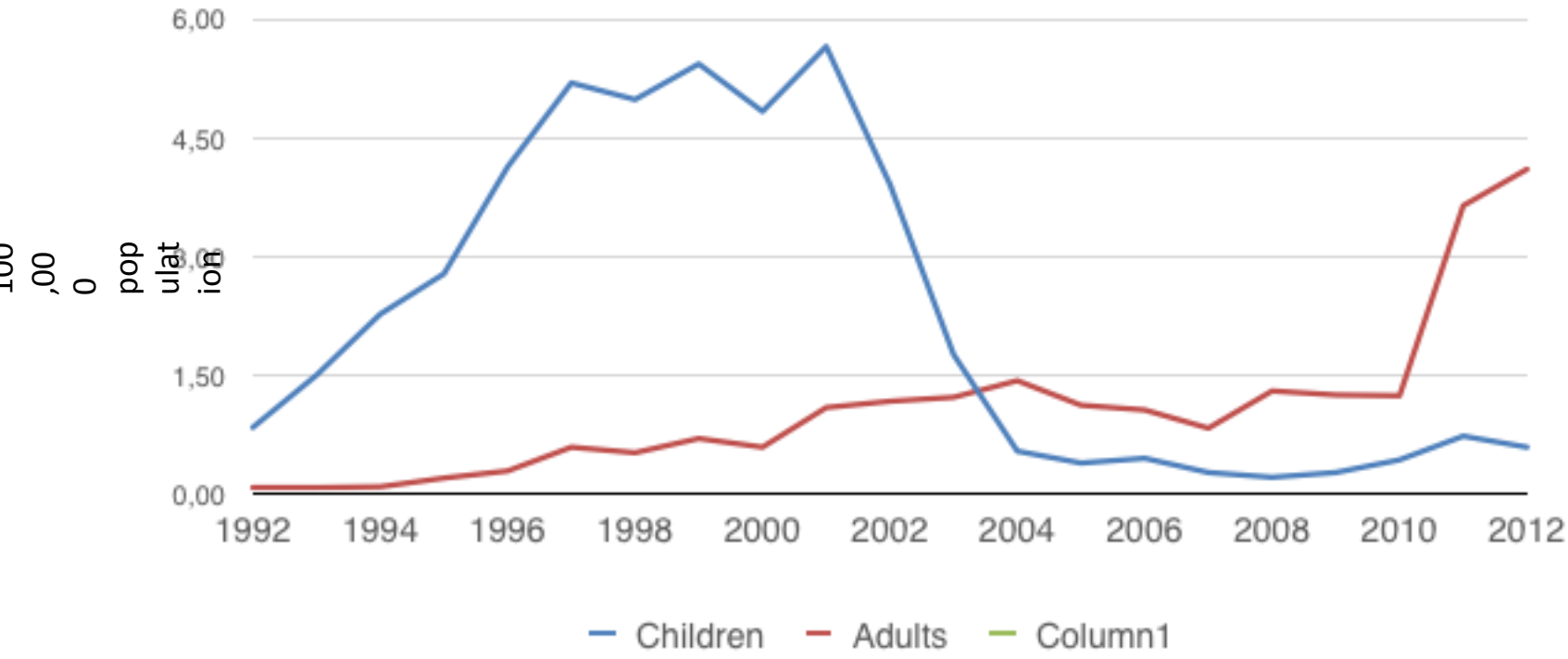
closely related to Angolan subtype
distantly related to S America F1

F1 origin: Congo (DRC), around the late 1950s



Guimaraes & al Retrovirology 2009

HIV incidence in adults and children (1985-2012)



Children 2012: 0.59/100,000

Adults 2012: 4.1/100,000

National Commission for Fighting against AIDS 2013 Report www.cnlas.ro

A mid2013 transversal view

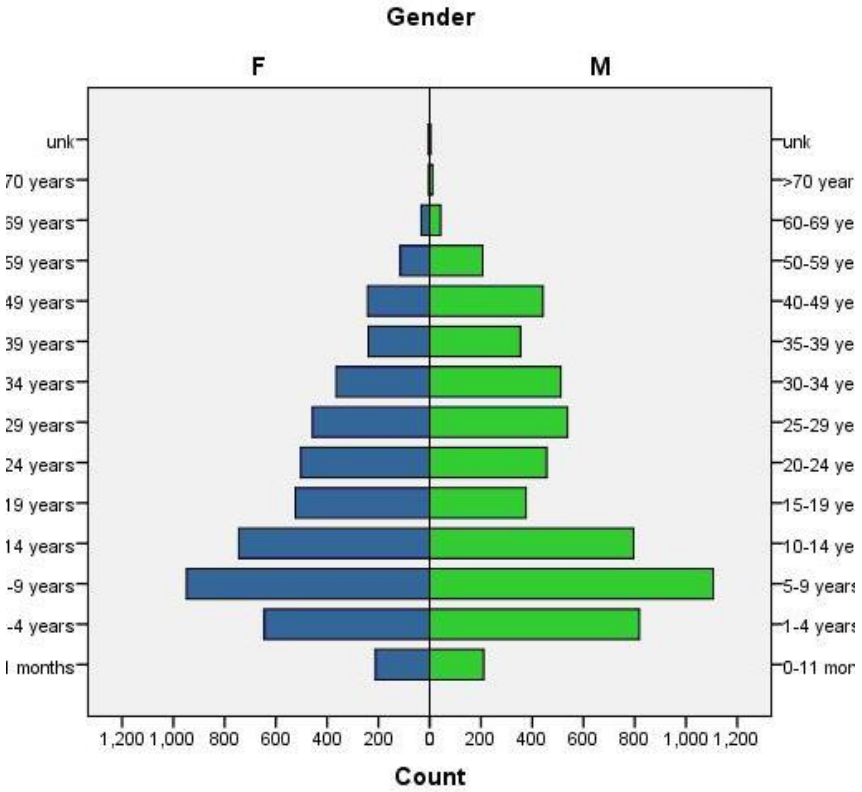
Total HIV/AIDS cases (cumulative total) 1985- mid 2013	***18,797***
Pediatric cases (at diagnosis)	9,931
Adults (at diagnosis)	***8,866***
People living with HIV/AIDS (PLWHA)	11,960
New HIV/AIDS cases in 2012	***754***
Patients in active follow-up	10,261
Pediatric cases in active follow-up (<14y)	***329***
Patients on cART	7,934

National Commission for Fighting against AIDS 2013 Report. www.cnlas.ro

Current age
Cumulative number 1985-2012

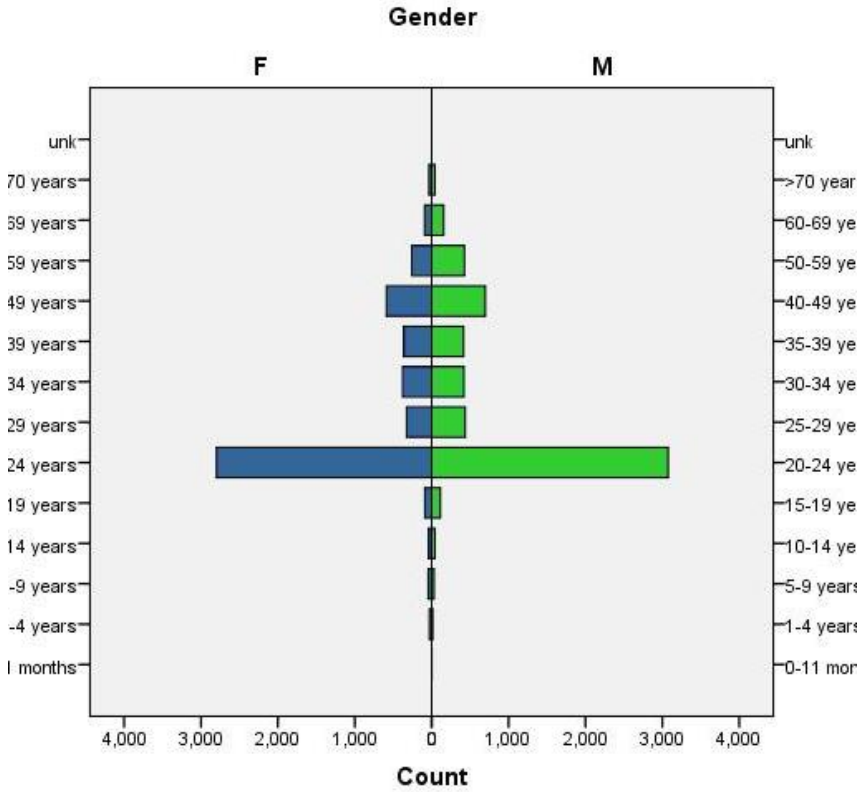
Age at diagnosis/notification date

Cumulative number 1985-2012



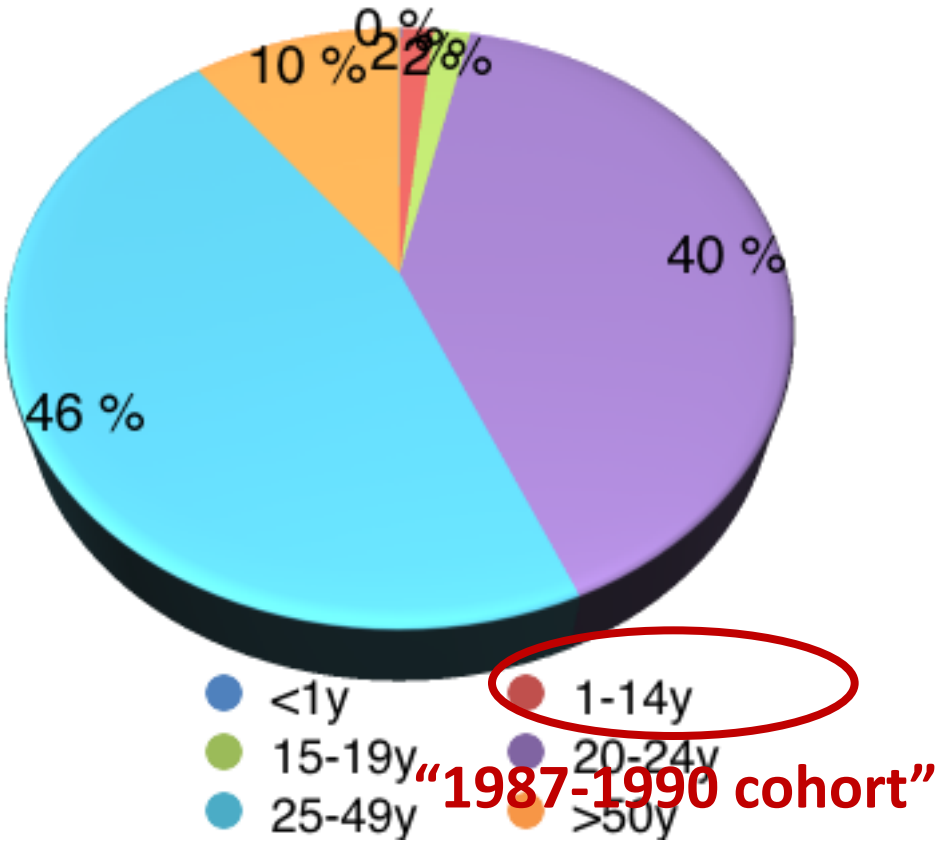
Current age

Cumulative number 1985-2012



Source: Compartment for Monitoring and Evaluation of HIV/AIDS Infection in Romania INBI "Prof.Dr.M.Balş"

Age distribution of PLWH

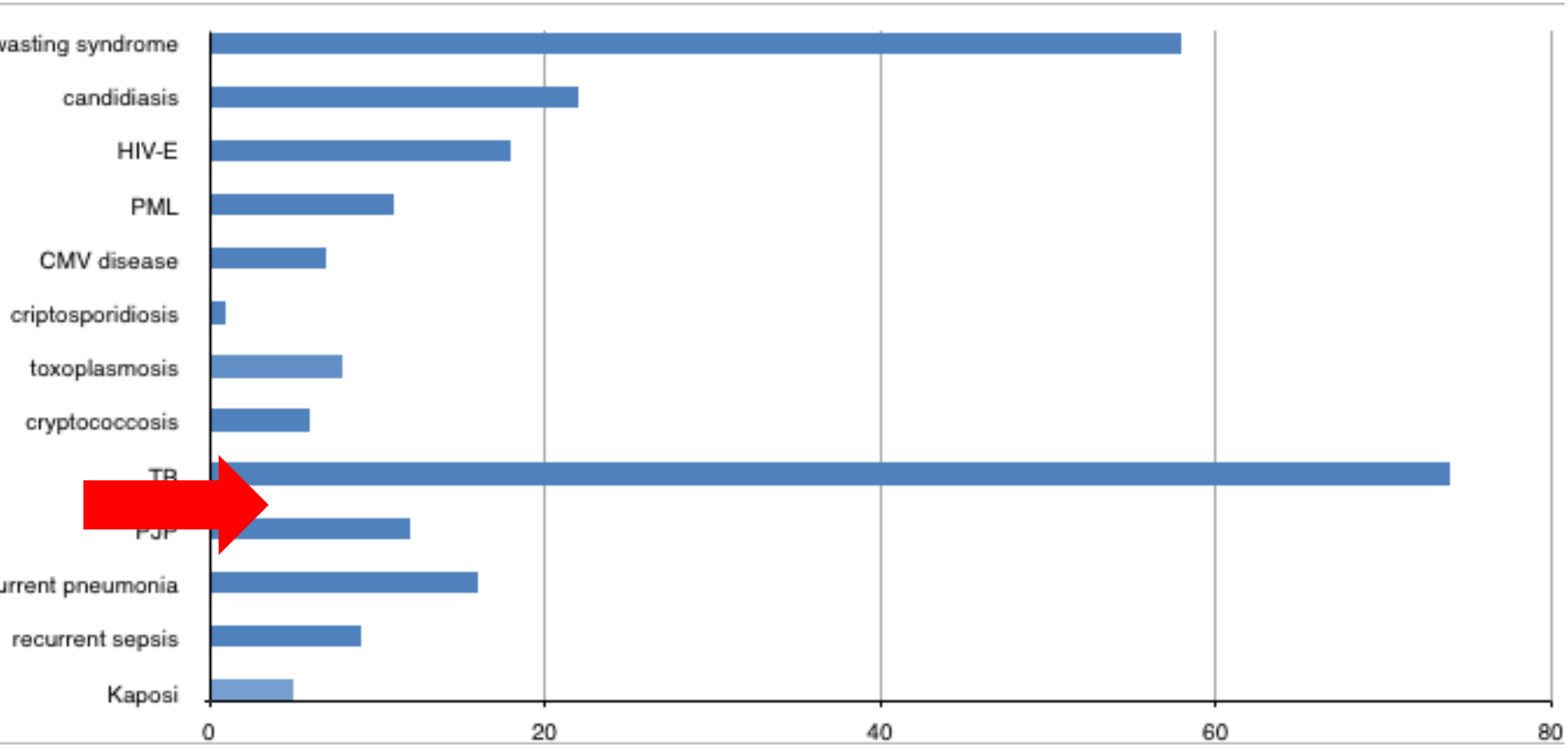


“1987-1990 cohort”

“1987-1990 cohort”

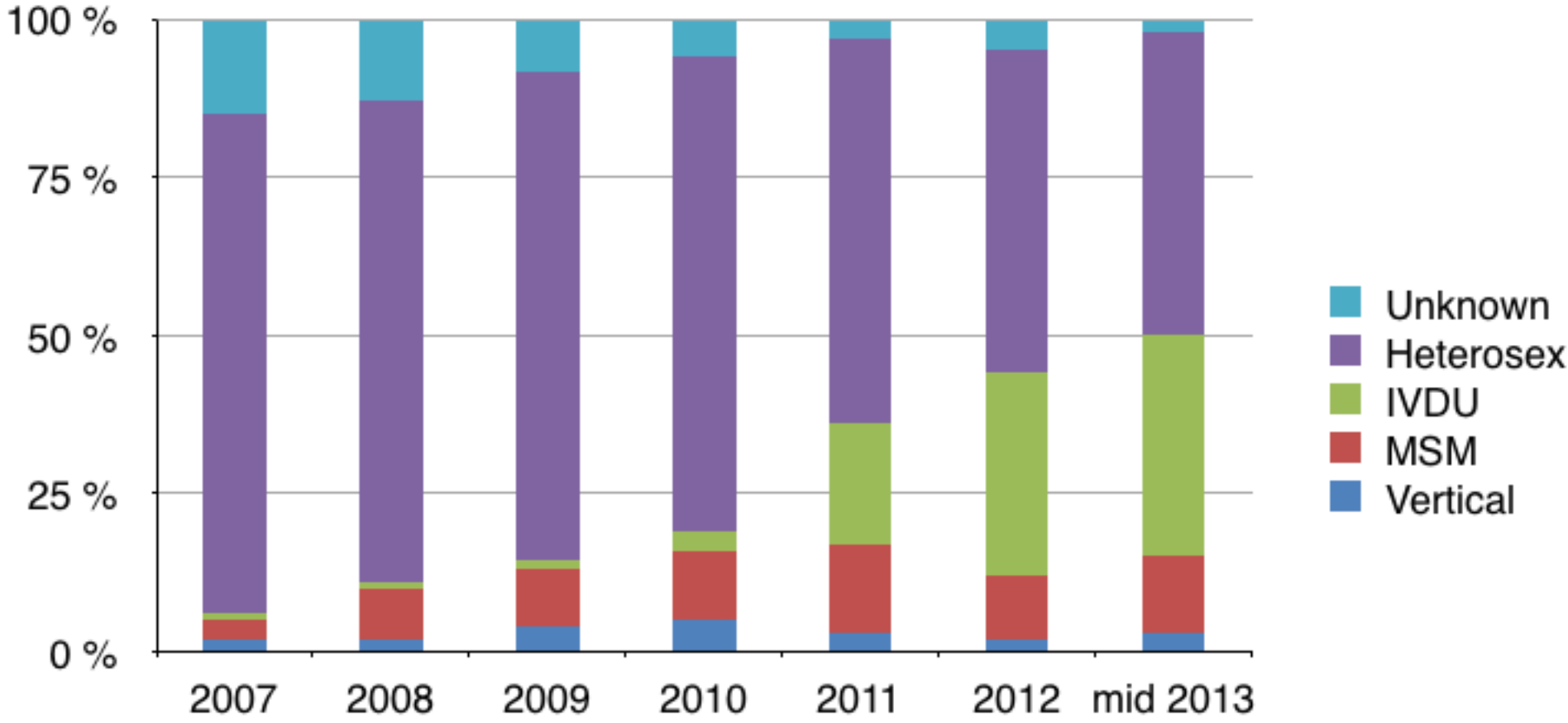
- The largest 23-26 year-old cohort in Europe
- Represents ~ half of Romanian HIV+ve population
- Sex-ratio 1:1
- F1 subtype almost 100 %
- Long-term survivors (~6000 survivors)
  - ➓ multiple ART regimens (10-15!)
  - ➓ salvage tx
  - ➓ ARV toxicities
  - ➓ “therapeutic exhaustion”
- Have/ want to have children of their own:
  - → vertical transmission problems↓
  - → teratogenicity of long-term use of ART

HIV-related illnesses 01.01-mid2013

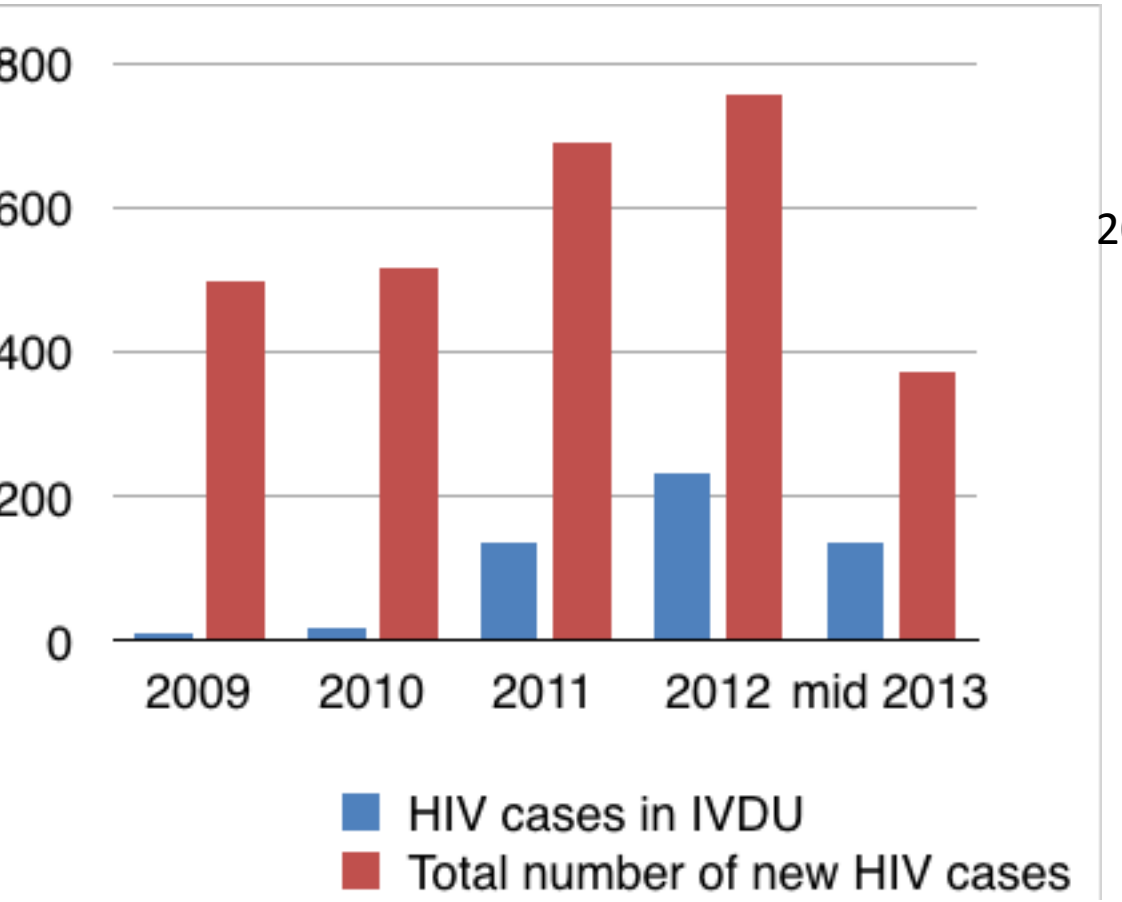


www.cnlas.ro

Changes in HIV transmission route



HIV in IVDU…a new epidemic?



Change in drug use

2009 → 97% heroin

2010 → 1/3 amphetamine-type stimulants

More frequent injections

More likely to share needles

□ access to sterile needles

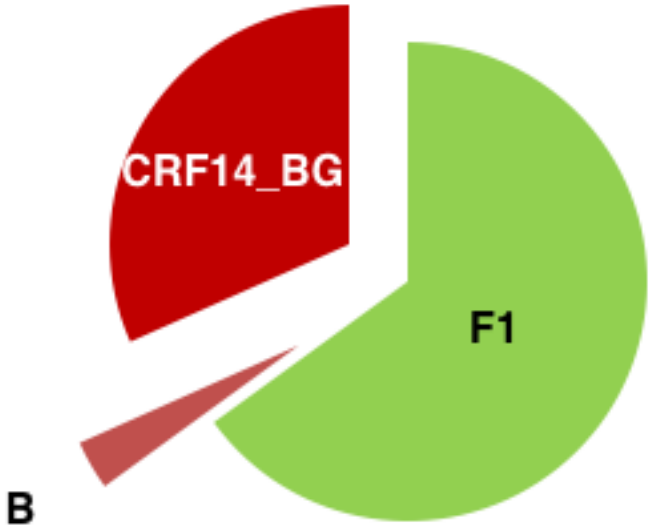
97.5% HIV+HCV 13.8% HIV+HBV 9.6% HIV+HCV+HBV 2.5% HIV+HCV+HBV+HDV

www.cnlas.ro; Oprea & al EACS 2013

HIV-1 subtype distribution in IVDU (I)

In total HIV Romanian population, F1 ~ **91%** (2003-2011)

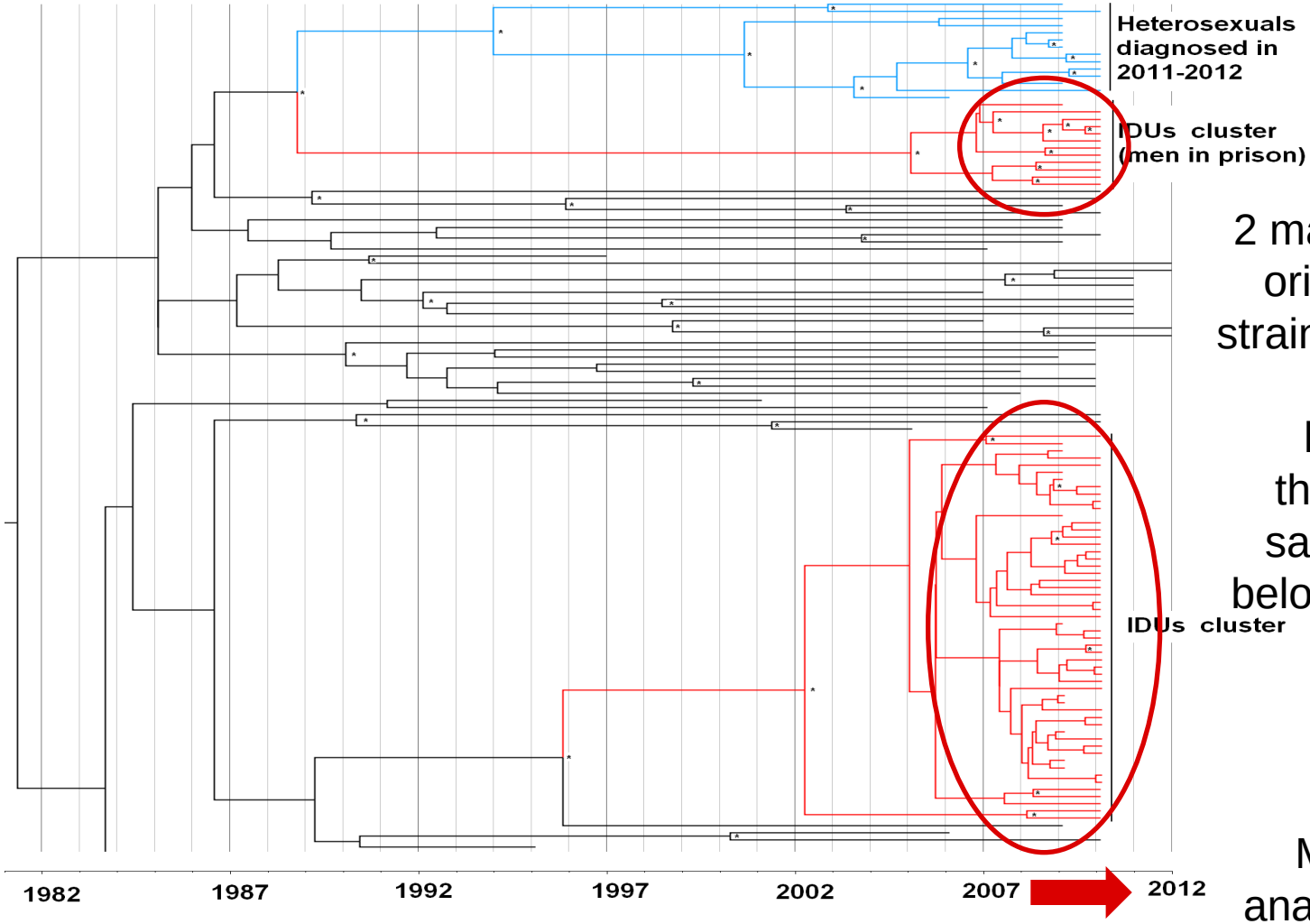
In the IVDU Romanian subgroup: **F1↓ (65%)** and appears **CRF14_BG**



CRF14_BG: emerged in Portugal →first isolation: Spain (1990) → spreads to the rest of Europe (migration of IVDUs)

Niculescu & al ECCMID 2013

Phylogenetic analysis of F1 sequences in IVDU

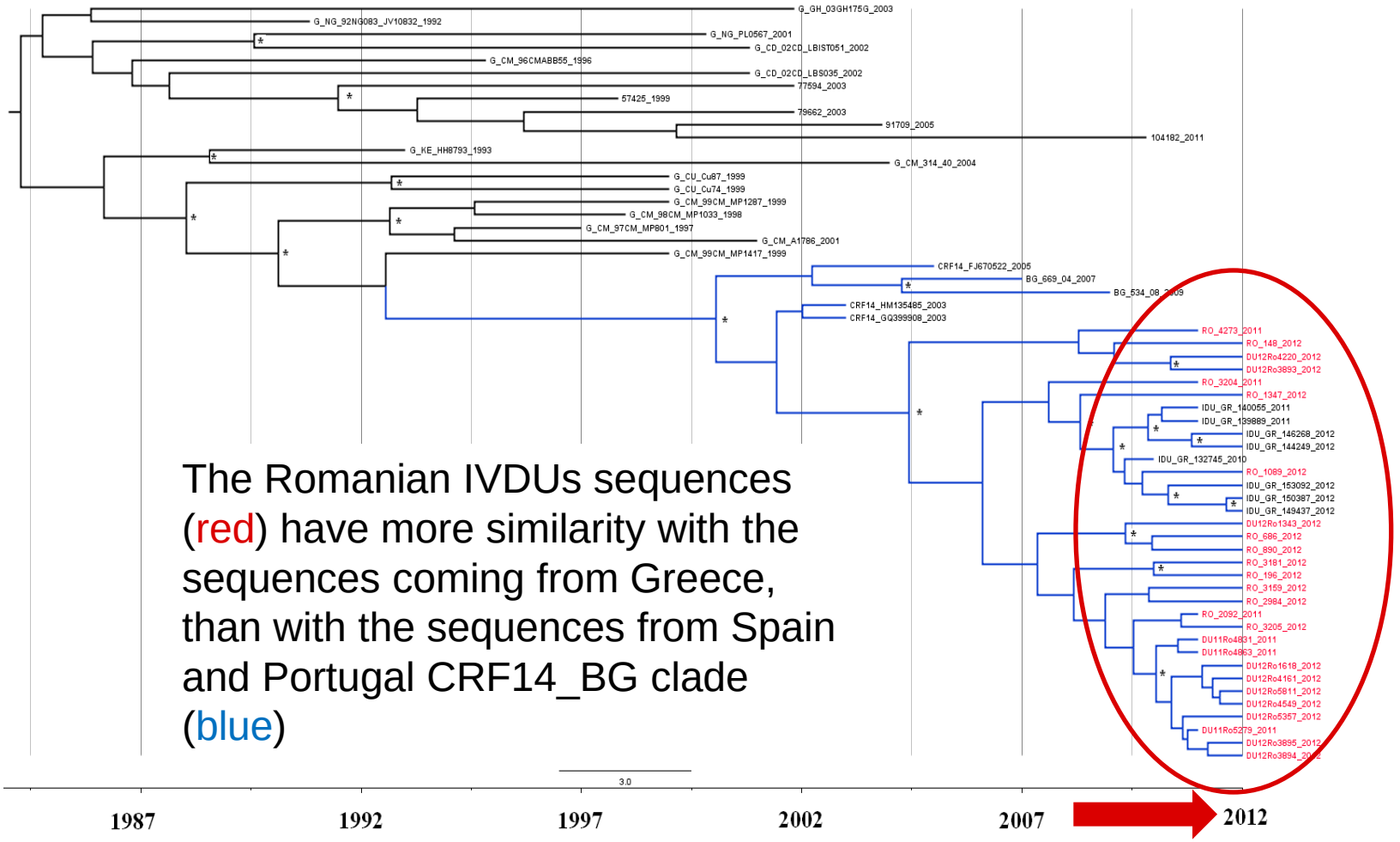


2 major clusters (red), originating from F1 strains that circulated in Romanian heterosexuals;
the small cluster= sampled from men belonging to the same prison

Molecular clock analysis: IVDUs sub-epidemic is very recent in Romania

Paraschiv & al 11th European Meeting on HIV, 2013, Rome

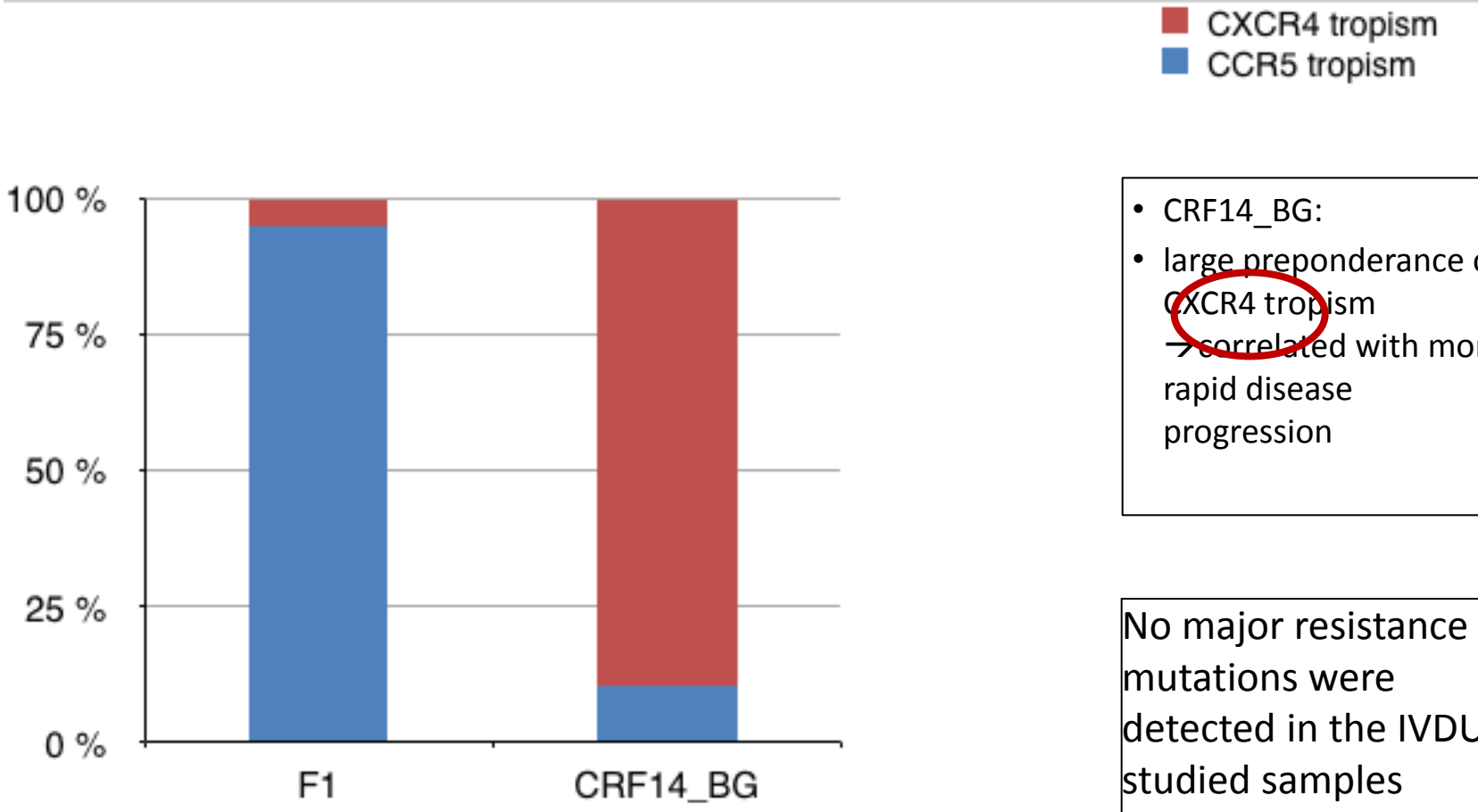
Phylogenetic analysis of CRF14_BG sequences in IVDU



The Romanian IVDUs sequences (red) have more similarity with the sequences coming from Greece, than with the sequences from Spain and Portugal CRF14_BG clade (blue)

Paraschiv & al 11th European Meeting on HIV, 2013, Rome

HIV-1 subtype distribution in IVDU (II)



- CRF14_BG:
- large preponderance of CXCR4 tropism →correlated with more rapid disease progression

No major resistance mutations were detected in the IVDU studied samples

Niculescu & al ECCMID 2013; www.cnlas.ro

HIV treatment & resistance

- Almost all antiretrovirals available

- Multi-resistance in multi-experienced pts

(multiple regimens used: beginning from AZT in monotherapy, AZT+ddI.....to HAART /cART)

- “therapeutic exhaustion”

Challenges …

- Therapeutic fatigue:
  - due to therapeutic fatigue and low adherence, many patients drop off treatment (>600 in 2011; >300 at June 2012)
- Self therapy interruption
- Self therapy discontinuation
- Late presenters

Source: *ART treatment situation in Romania.* Mărdărescu Mariana: EACS Belgrade, 13 October 2011
Compartment for Monitoring and Evaluation of HIV/AIDS Infection in Romania INBI "Prof.Dr.M.Balş"

New cases:

- Late or very-**late** presenters: heterosexuals, F1
- Very-**early** presenters: MSM&IVDU (primary HIV infection!):
  - MSM: highly educated → pro-active self-screening
  - IVDU: socially registered → screened by medical staff

- Transmitted resistance: low in all groups <10% (4.6%)

- A special issue: children of IVDU HIV+HCV+HBV coinfected mothers!

Expectations

- Newborns:
  →from HIV-HCV (+/-HBV) co-infected IVDU mothers: a medical and national challenge
  →from “1987-1990 cohort”: teratogenicity of the long-time ARV use

- Multi-resistance:
  →non-adherence for IVDU
  →“therapeutic exhaustion” and
  →multiple tx regimens for “1987-1990 cohort”

- New X4-tropic HIV variants (more severe & rapid course?)
  →CRF14_BG already existent
  →BG combined with F1?

- The legal use of Amphetamine-type stimulants was stopped (2011) → a decline of epidemic in IVDUs?

Conclusions

- Romania, began as an F1 “island” of HIV in Europe,

with

- a homogenous HIV population consisting in nosocomial infected newborns (1987-1990) = ~ half of actual HIV+ve cases: the largest 23-26yo cohort in Europe, multiple ARV-experienced and tx-exhausted,

- is following now the general European trend: increasing incidence in IVDU and MSM,

with

- the emergence of new X4-tropic HIV variants: CRF14_BG, of South European origin in IVDU and expectation of recombinant F1 + CRF14_BG

Conclusions

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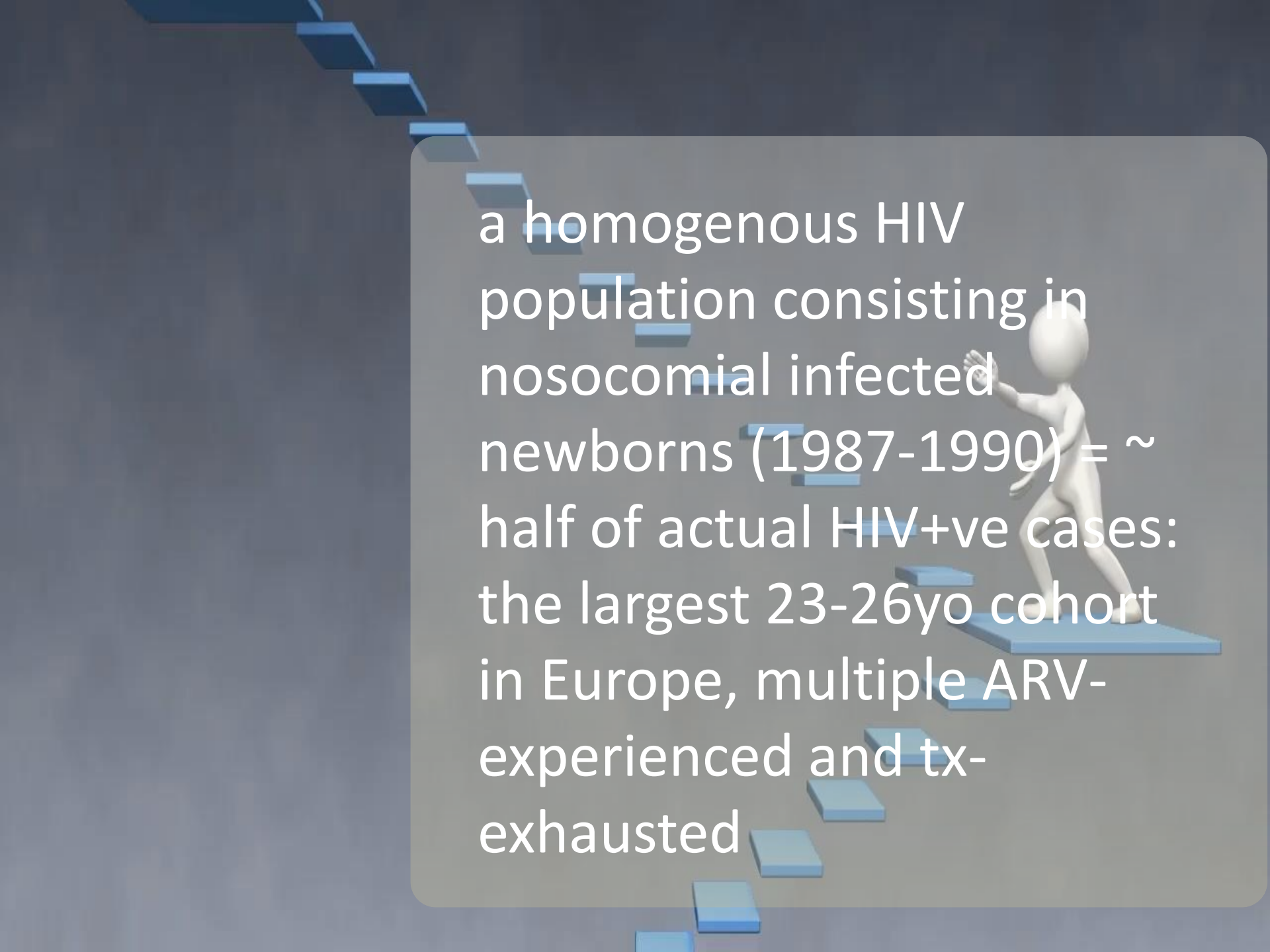

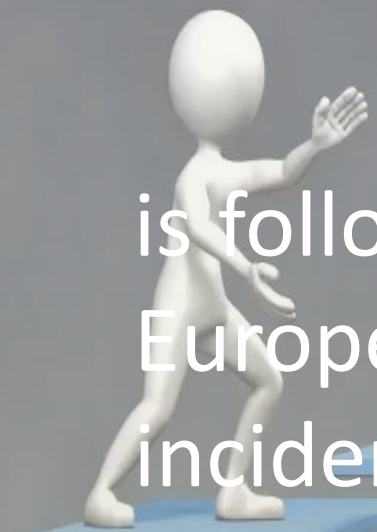

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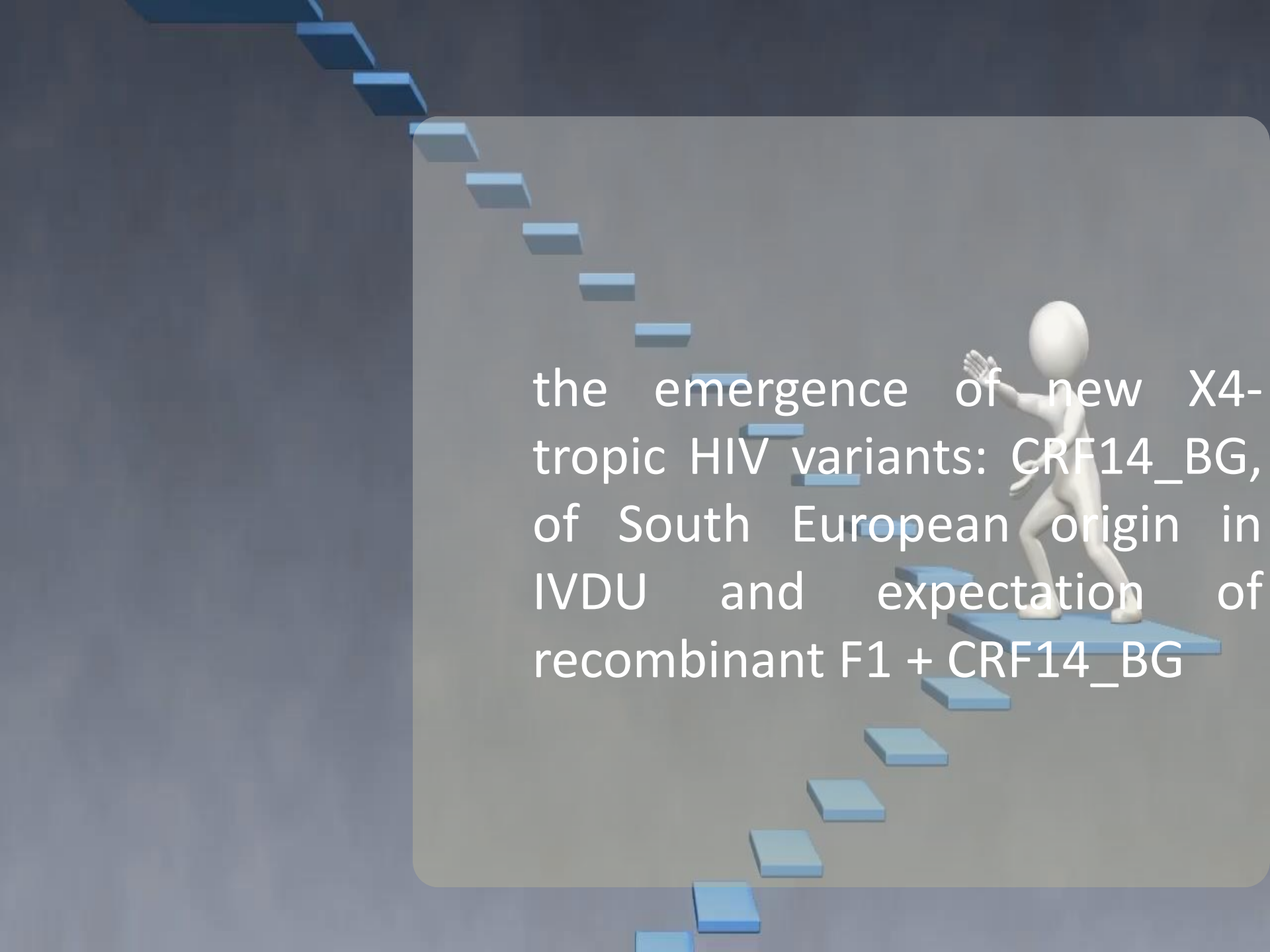
the emergence of new X4-tropic HIV variants: CRF14_BG, of South European origin in IVDU and expectation of recombinant F1 + CRF14_BG

Table of Silence

Constantin Brâncuși

Column of Infinity

Sources

www.cnlas.ro

www.mateibals.ro

www.hivromania.ro

http://www.aidsacademy.org/