

TRANSFUSION SERVICE IN THE CZECH REPUBLIC

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Czech Republic



78 864 km²

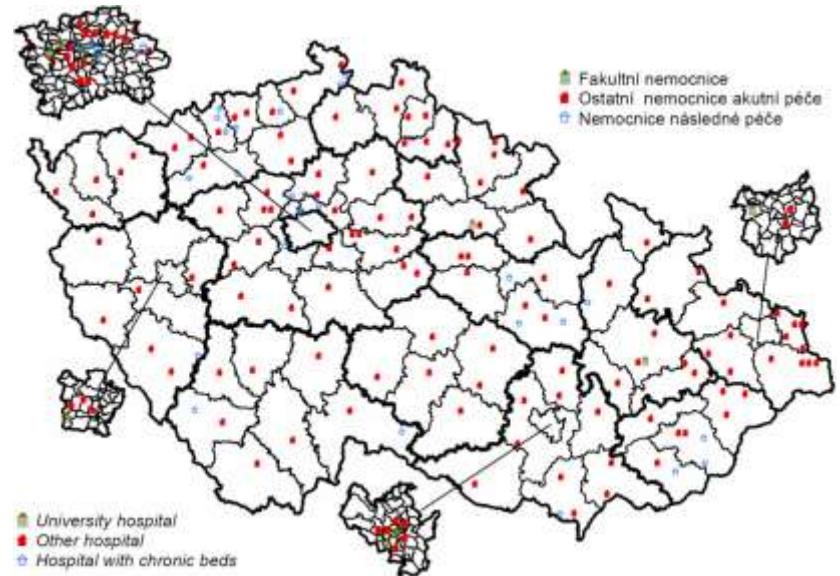
10,5 million inhabitants

14 regions



Health Service – Czech Republic

- **188 hospitals**
 - incl. 20 regional / teaching
 - 58,800 hospital beds
 - 148 blood banks (xmatch)
- **Health care is covered with health insurance**
(incl. blood components + plasma derivatives)
- **Transfusion Medicine + Haematology = one medical specialization**



Czech Republic - Transfusion Service

- **Decentralised ... „hospital-based“**
- **53 fully equipped centers (processing + testing)**
- **19 WB collection centers**
- **148 blood banks (x matching)**
- ... **RBC, P, Plt for patients**
- ... **P for fractionation (201t L → P derivatives for patients)**

- **Since 2008 – commercial PF centers (12)**
- ... **P for fractionation (421t L → EU plasma pool)**

Czech Republic - Transfusion Service

- **EU law (Blood Directives) – 100% adoption**
- **Medicine Law (2007), Blood Decree (2008)**
- **SUKL - State Drug Control Agency**
 - **license blood/BC donations, processing, testing, distribution ...**
 - **inspection division – audit every two years**
 - **haemovigilance division – reports of serious AR + AE**
- **Czech Society for TM collects all AR + AE**

Blood/Blood Components Donation

- **Voluntary, unpaid**
- **Benefits for donors: time off, refreshments, fare**
- **Remuneration – compensation (optional)**
 - Plasma donation 300 – 500 Kč (11 – 18 €) – C-PF centers
 - Platelets donation 900 Kč (33 €)
- **Tax deduction for non-remunerated donors**
 - 150 Kč (5,5 €/donation)
- **Benefits from health insurance companies**

Donations in the Czech Republic

(2014, 2013 in thousands)

	Hospital TS	PC-F
WB remuneration	402,2 0 %	-
Plasma remuneration	190,6 1,8 % (13)	496,1 100 % (13)
Apheresis (Plt, RC, MCD) remuneration	18,2 59,4 % (13)	-
Autologous	11,2 (13)	-

Testing of donors

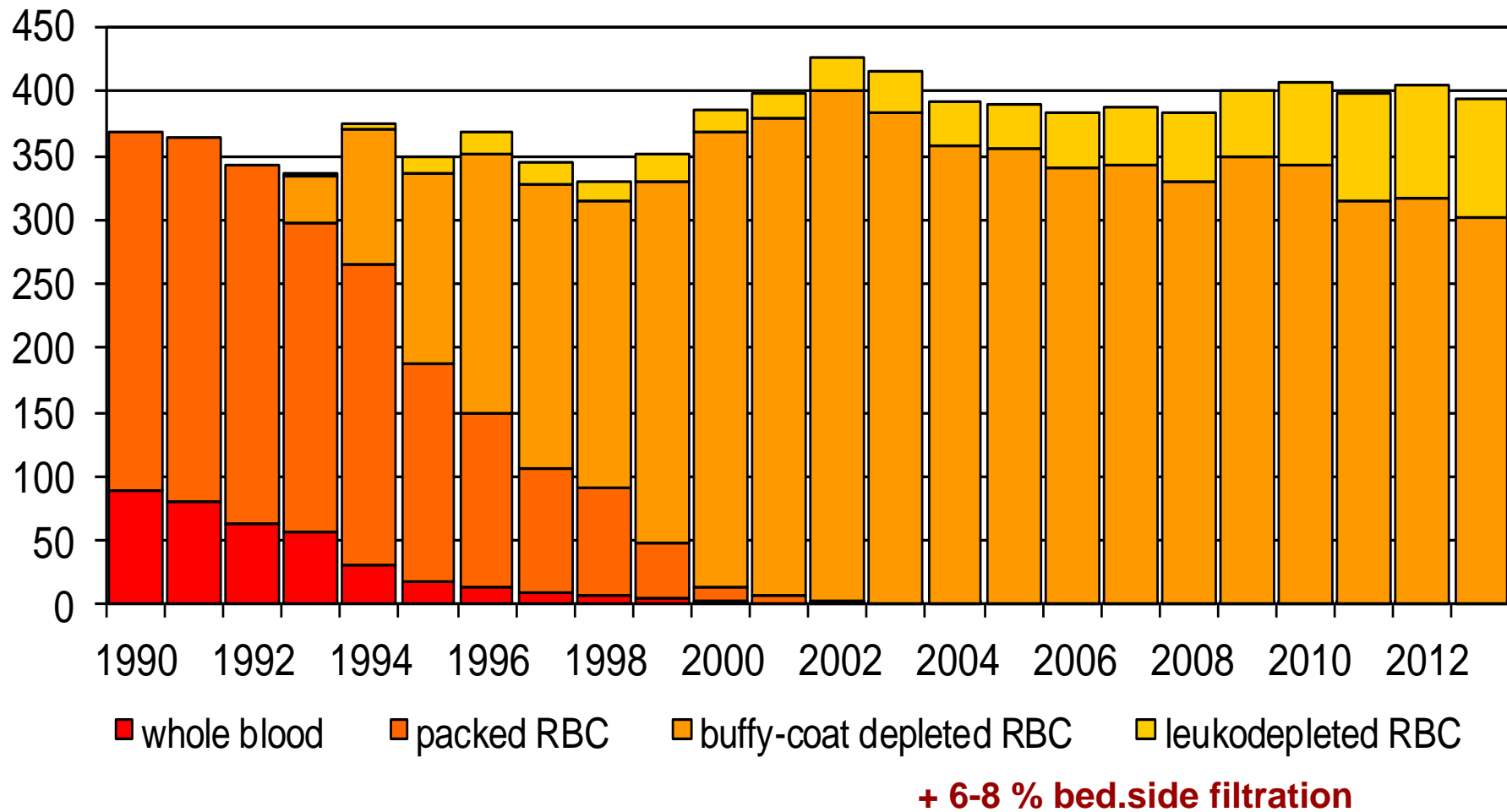
- **Mandatory tests**
 - anti-HIV + p24 Ag (combo test)
 - anti-HCV
 - HBsAg
 - syphilis (Ab)
- **Optional tests**
 - HCV Ag (combo test)
 - NAT testing (2 centers)
 - anti-HBc

Clinical use of BC and PD

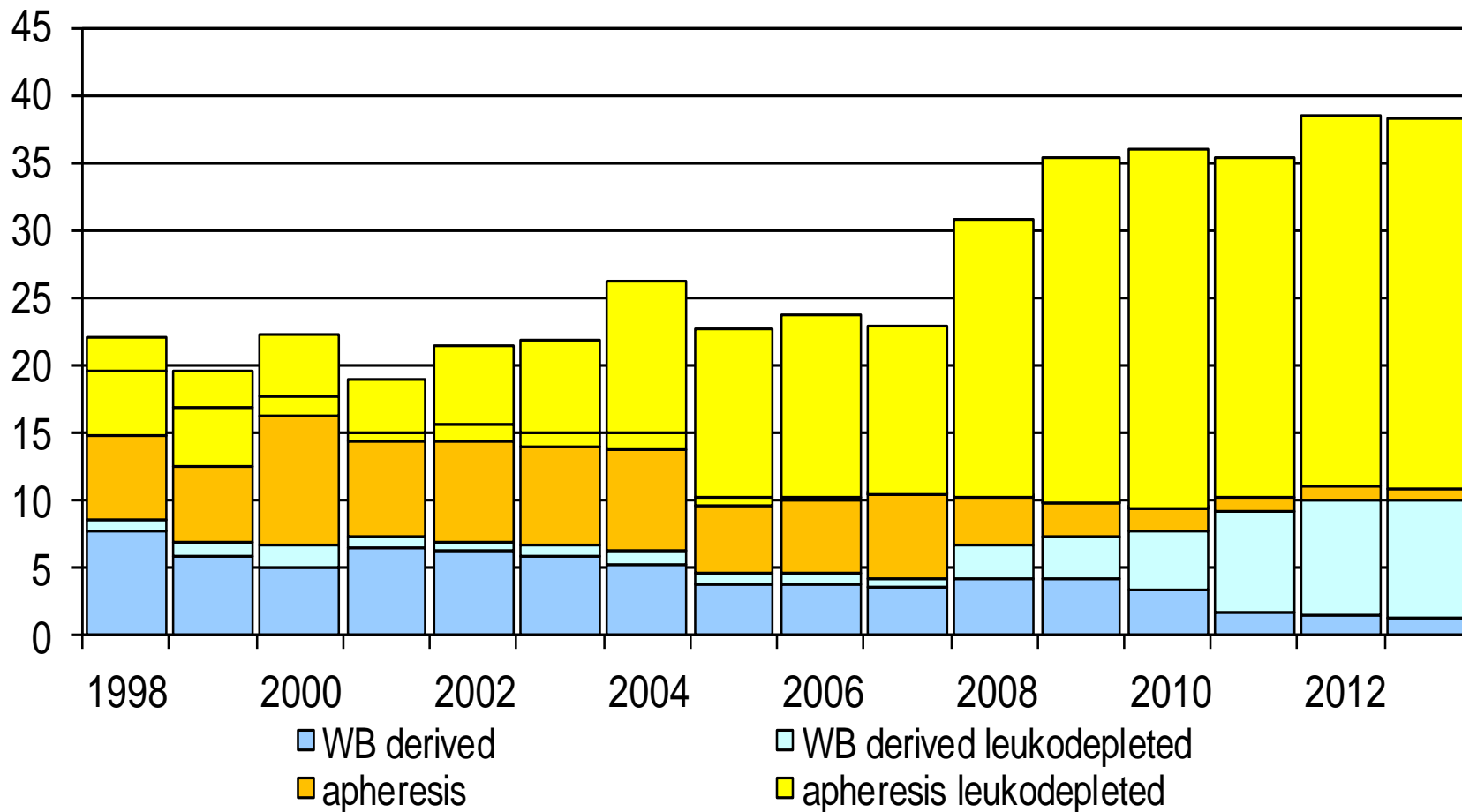
- **RBC – 380 t TU**
- **Plasma – 47 t L (quarantine 6 moths)**
- **Platelets – 36,4 t T.D.**

- **Albumin ... 1221 kg**
- **F VIII ... 51,8 m IU, F IX ... 4,8 m IU**
- **Fibrinogen ... 8965 g, PT complex ... 5,9 m IU**
- **AT ... 4,3 m IU**
- **Ig ... 292 kg i.v., 67 kg s.c.+ i.m.**
- **Anti-D Ig ... 30,9 t IU**

RBC (thousands of TU)



Platelets (thousands of T.D.)

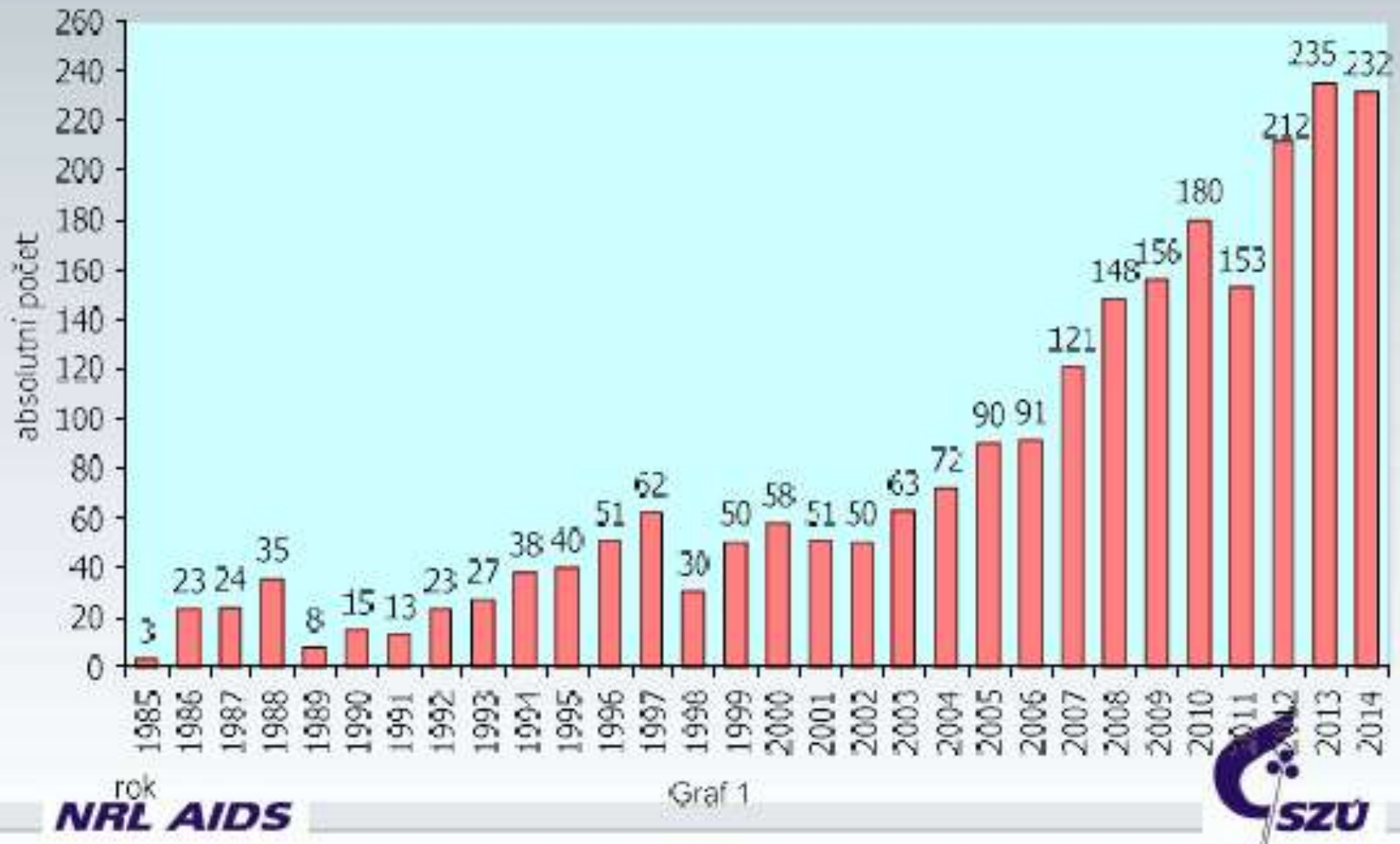


Epidemiological situation of the Czech Republic

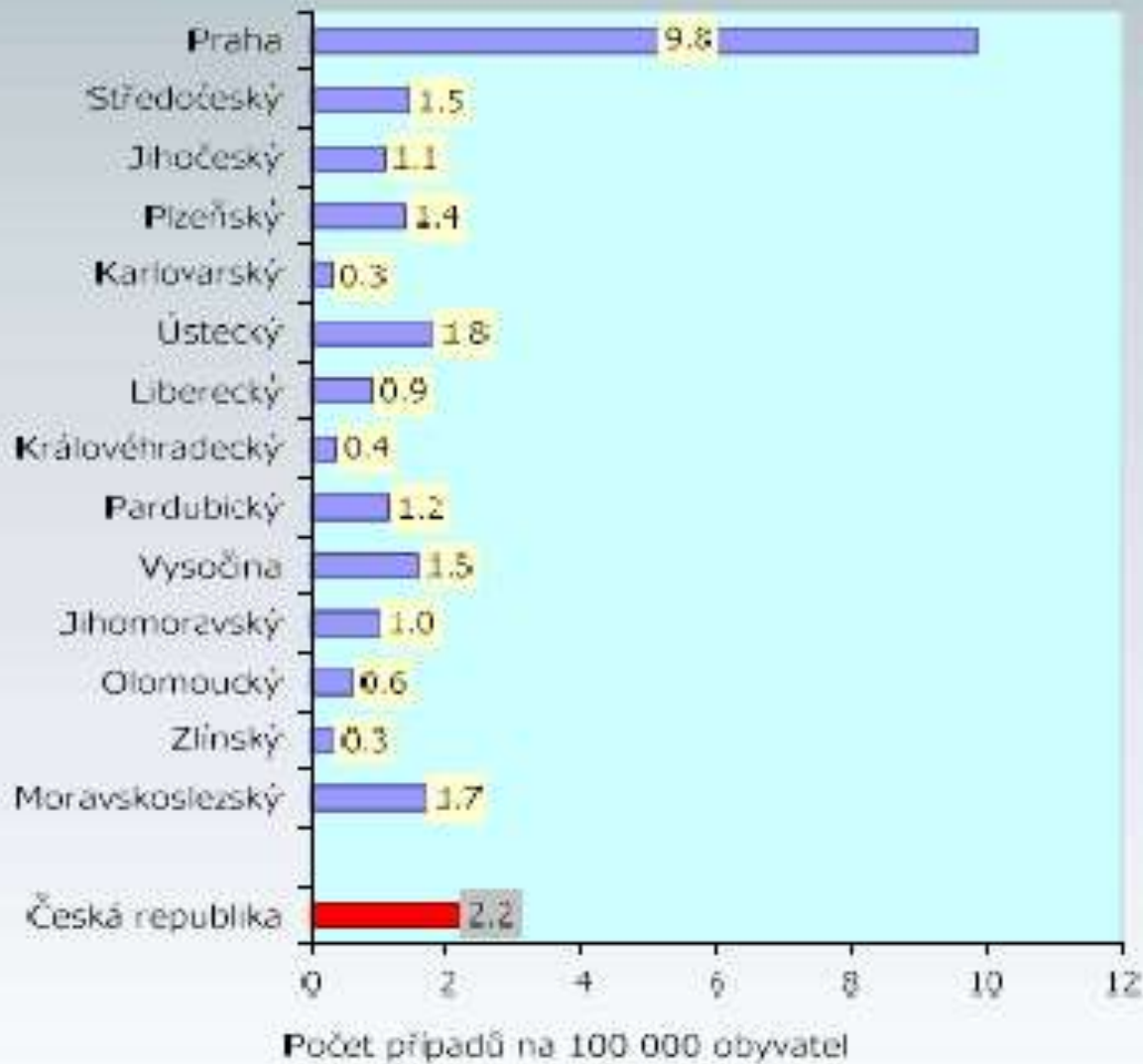


Czech Republic: New HIV cases

(as to date 31 December 2014; 10,5 mil. inhabitants)



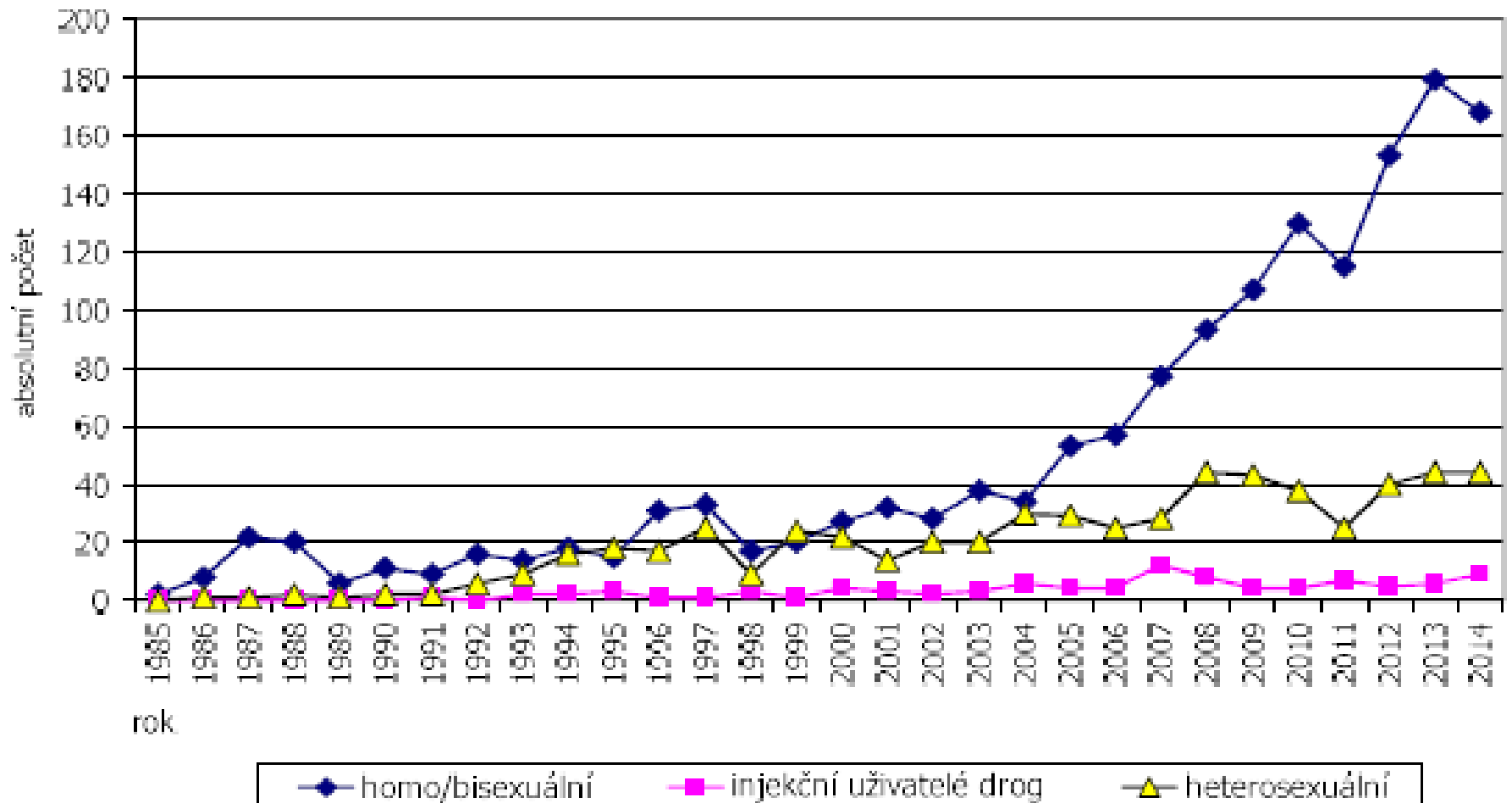
Czech Republic: Regional occurrence of new HIV cases (as to date 31 Dec 2014; cases/1 mil. inhabitants)



Počet případů na 100 000 obyvatel

Graf 4

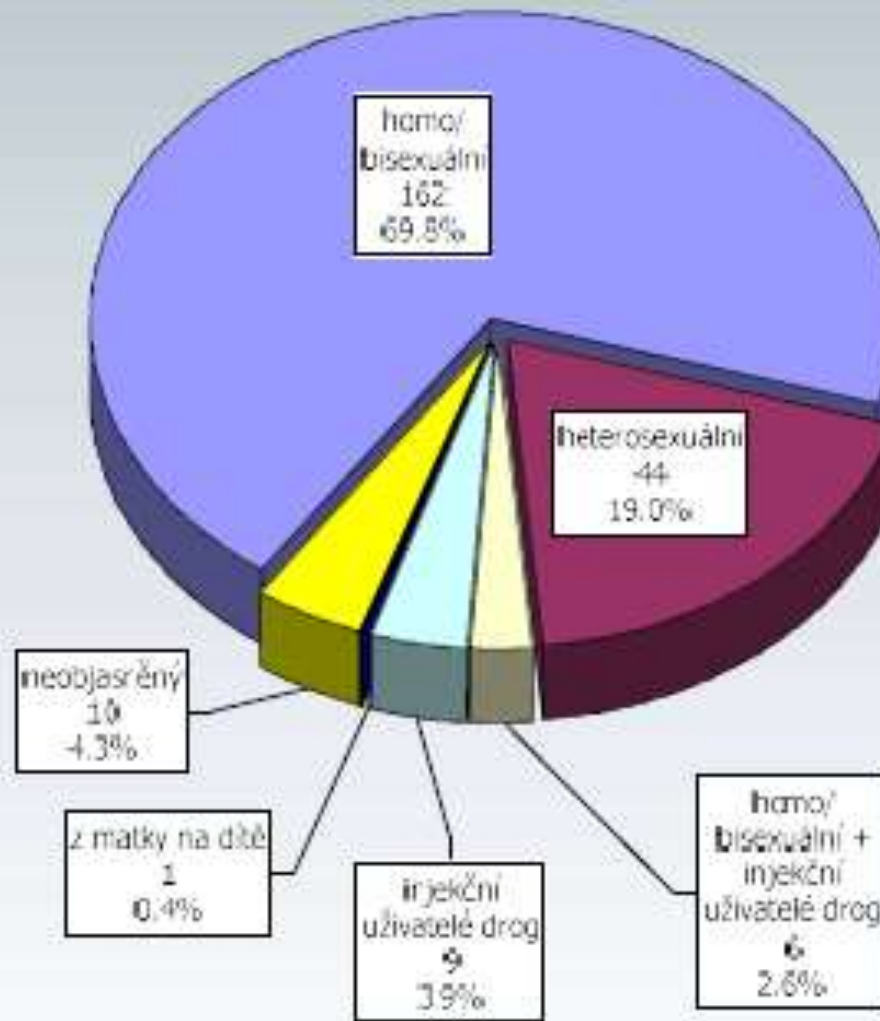
Ways of HIV Transmission 1985 – 2014



Graf 7

HIV Transmission

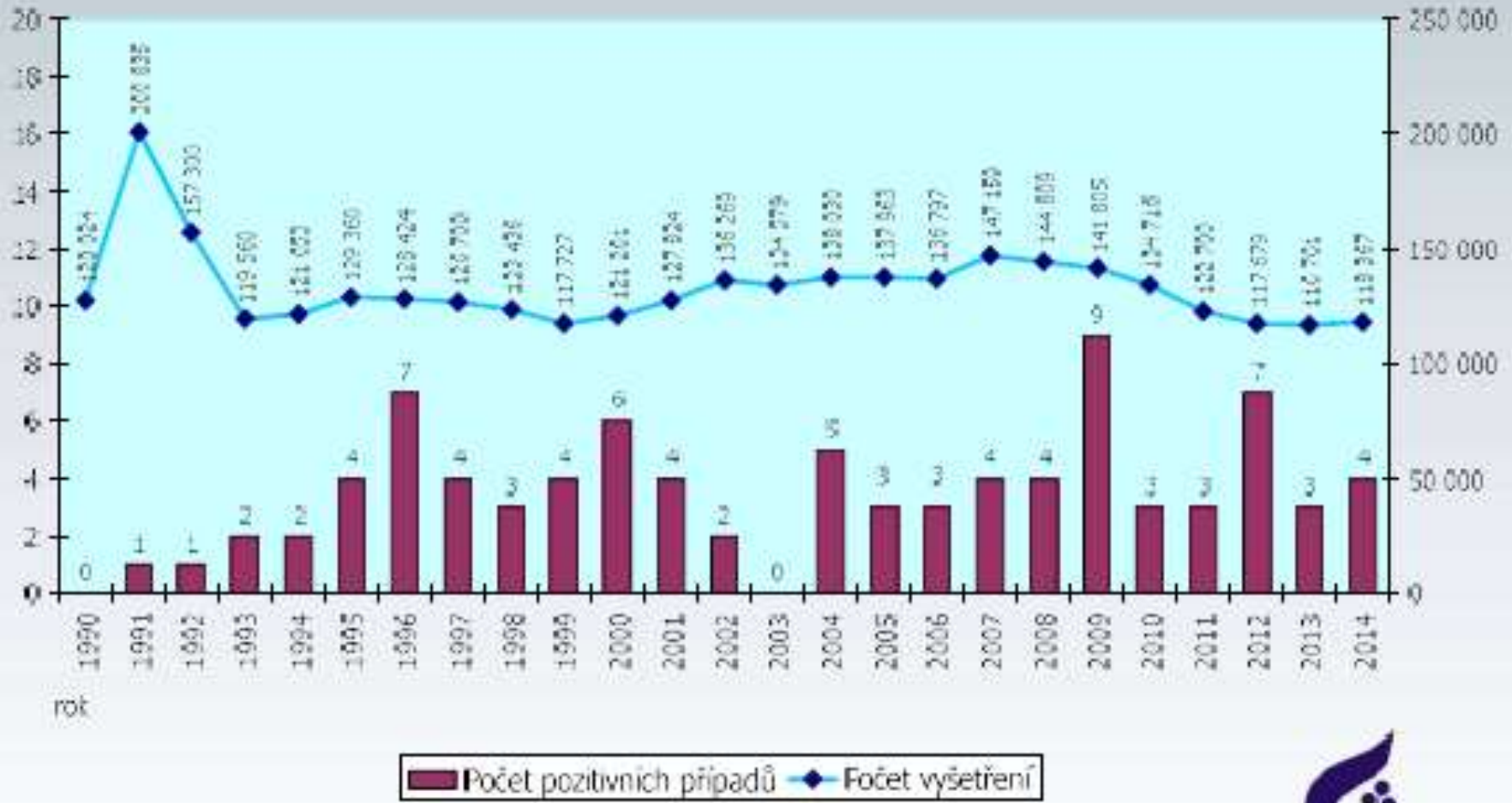
2014



Graf 6

HIV testing of pregnant women

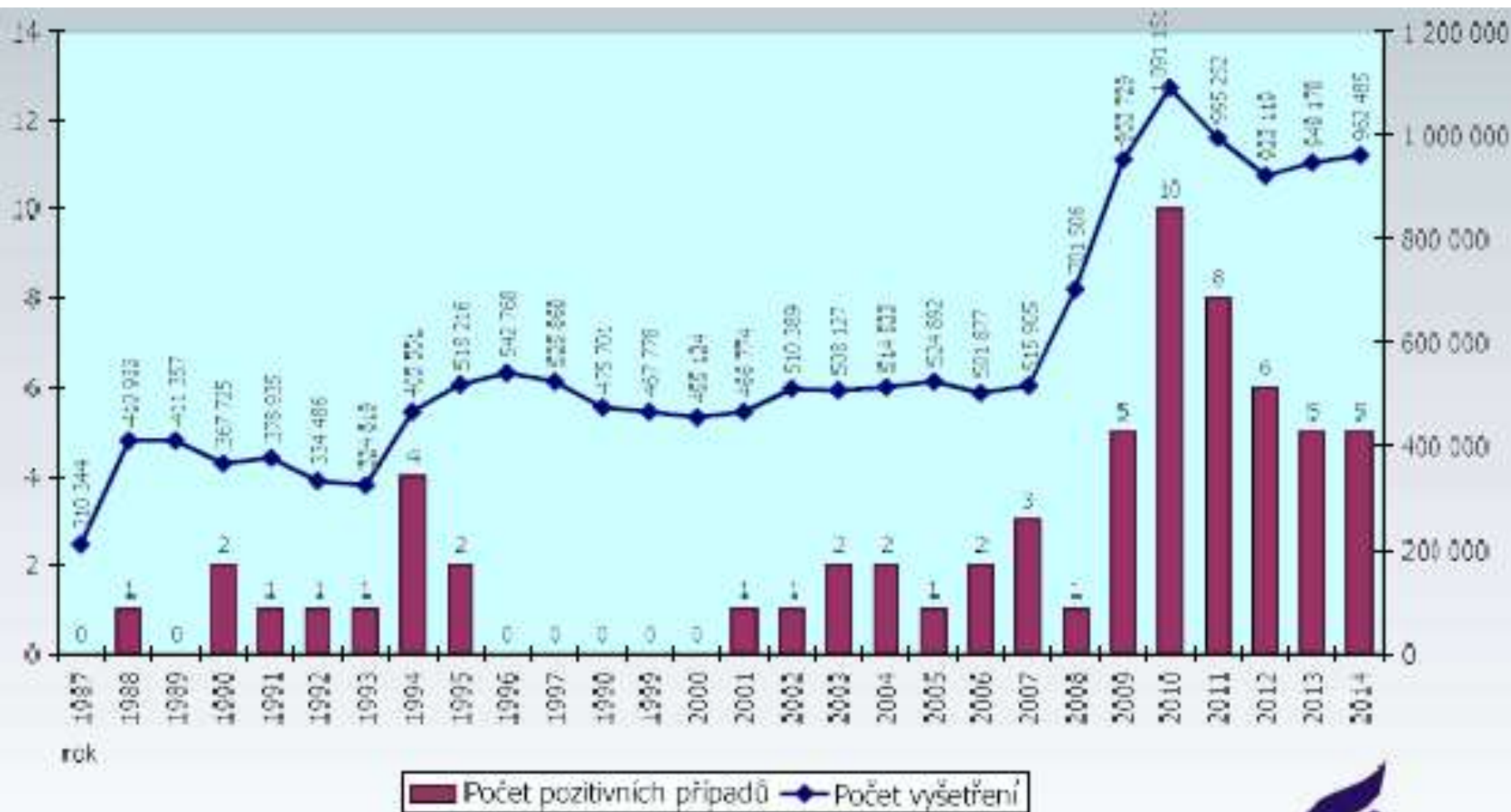
1990 – 2014



Graf 9

HIV testing of donors

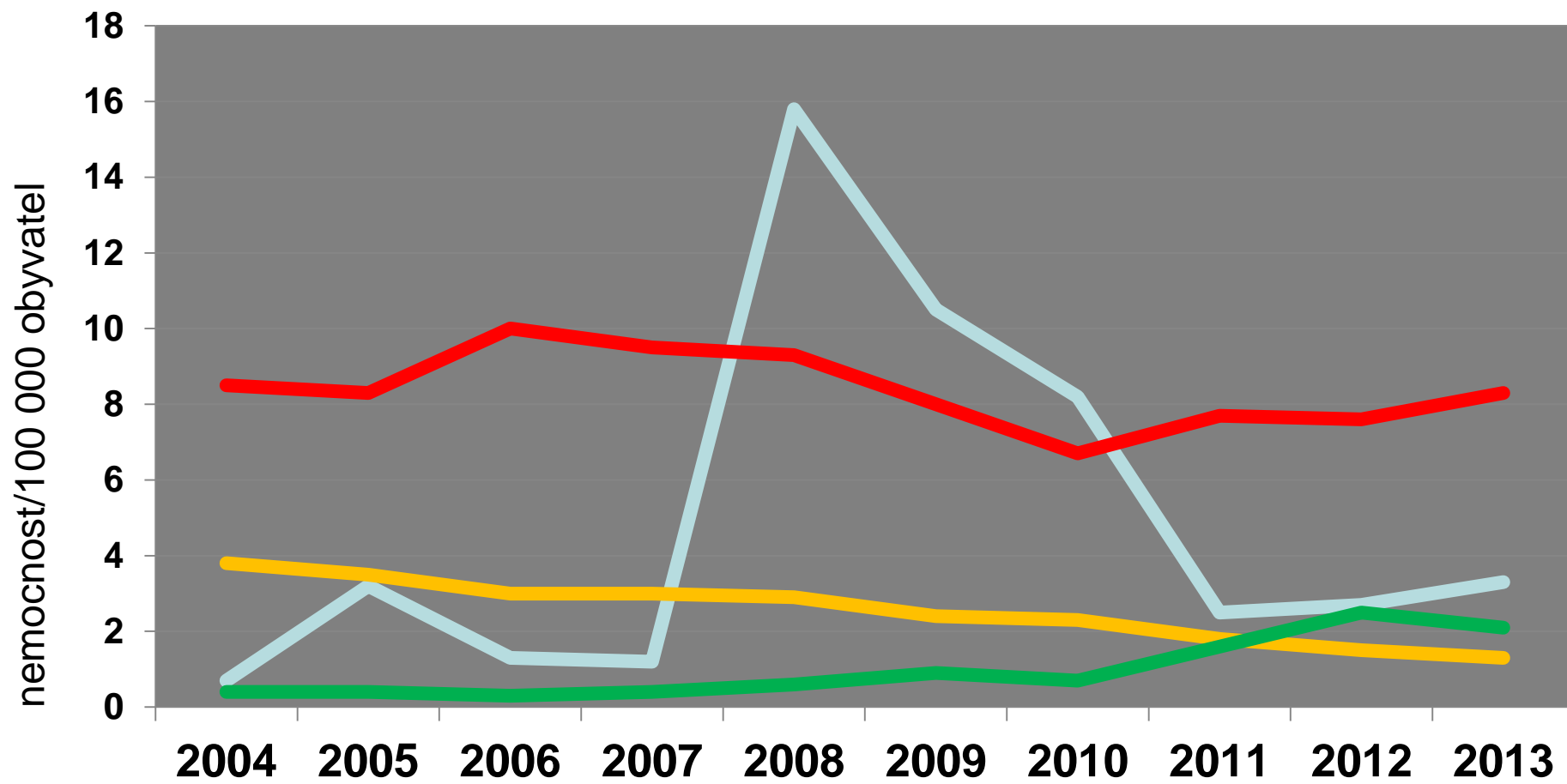
1987 – 2014



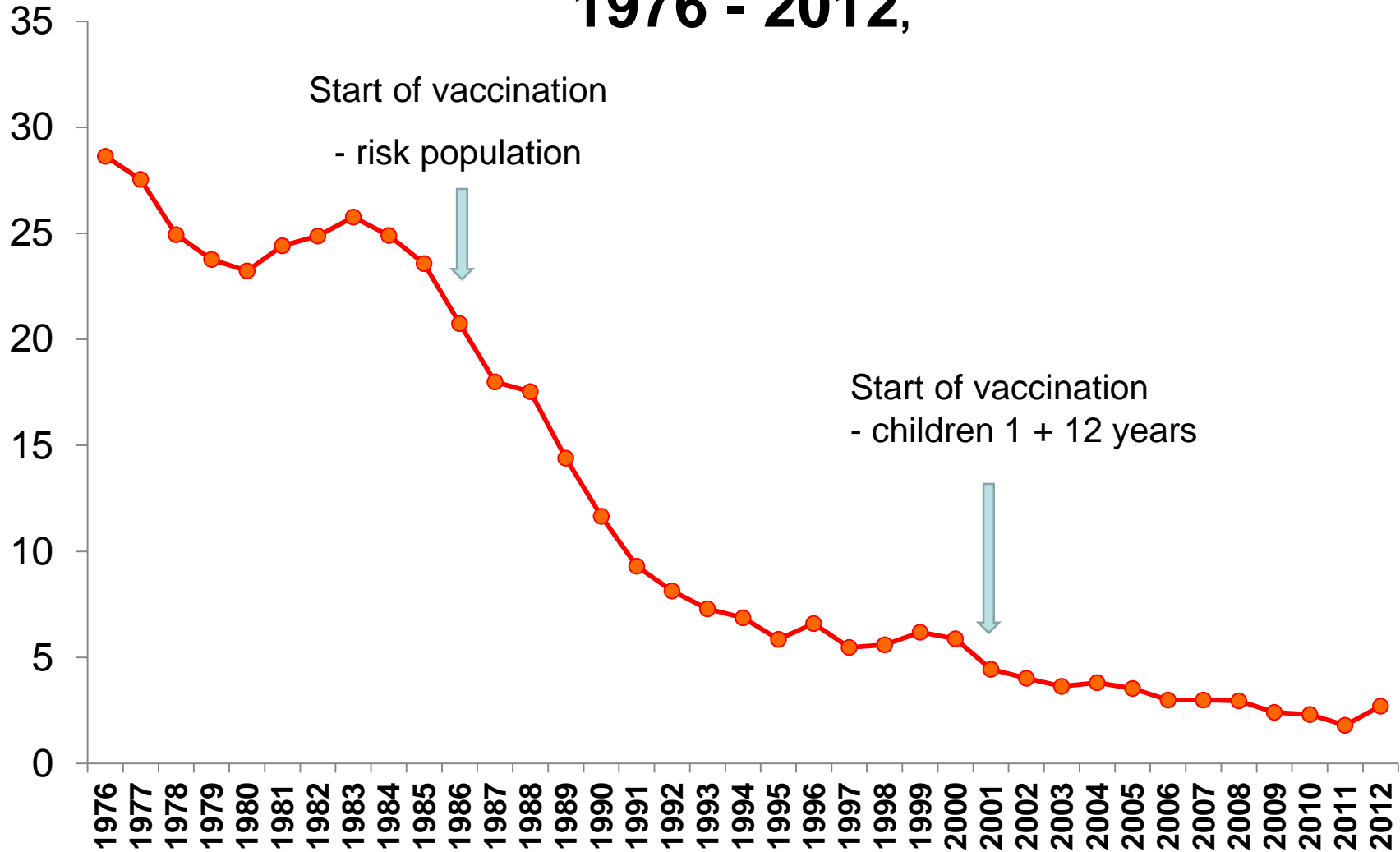
Graf 8

Hepatitis A,B,C,E - cases/100 000 inhabitants 2004-2013

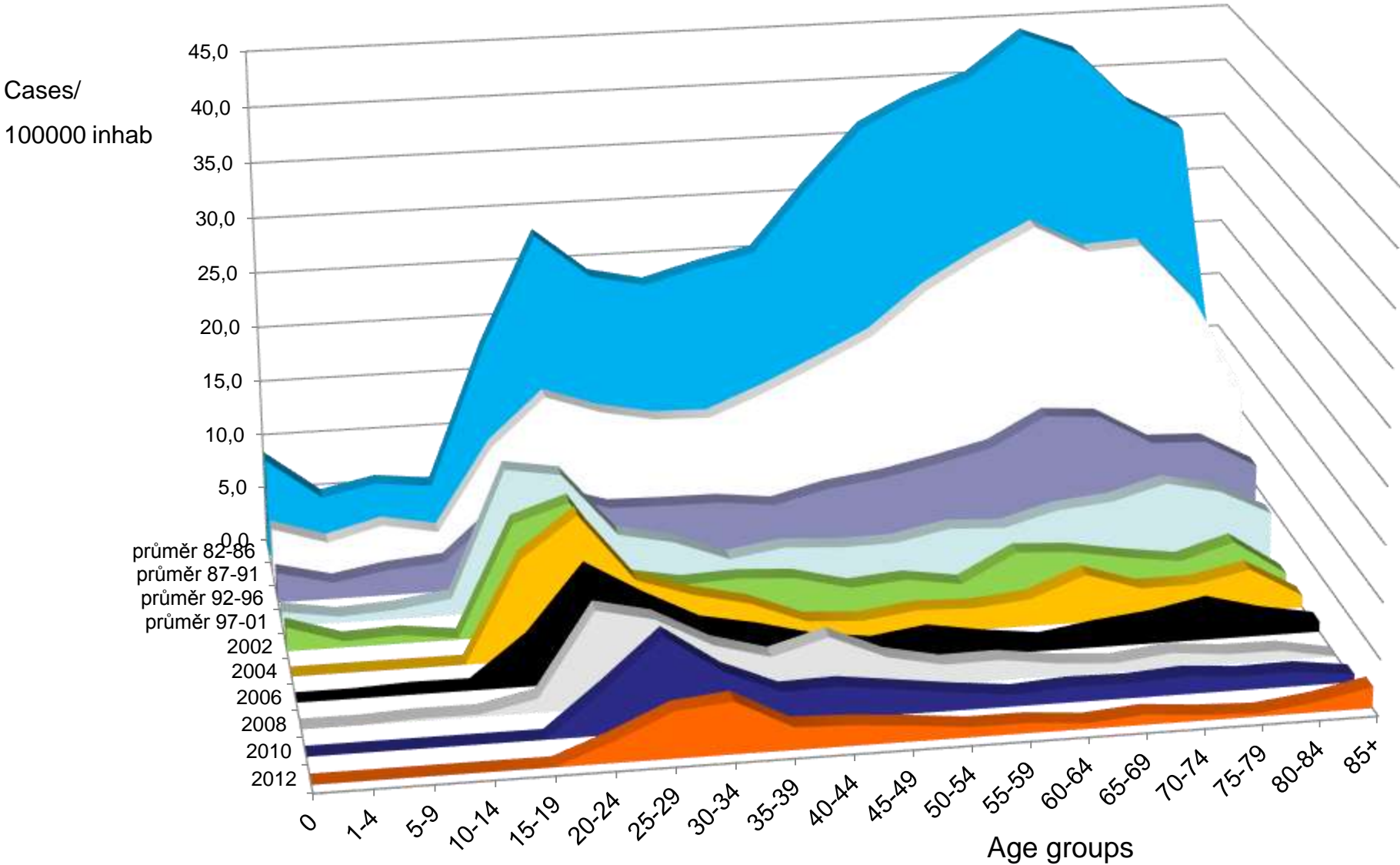
— VHA — Akutní VHB — VHE — VHC



Acute HBV, cases/100 000 inhabitants 1976 - 2012,

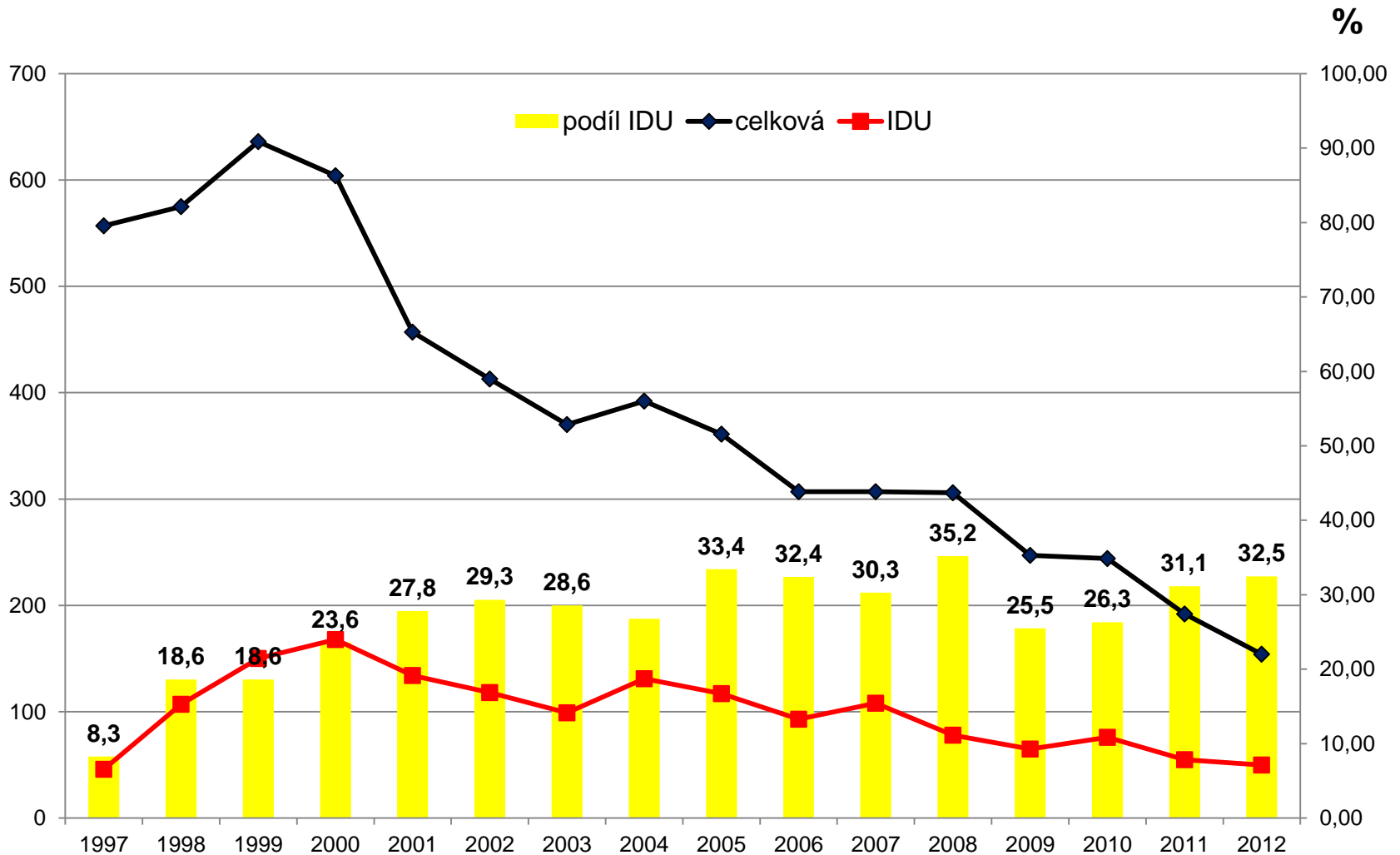


Acute HBV, morbidity/age groups, 1982-2012



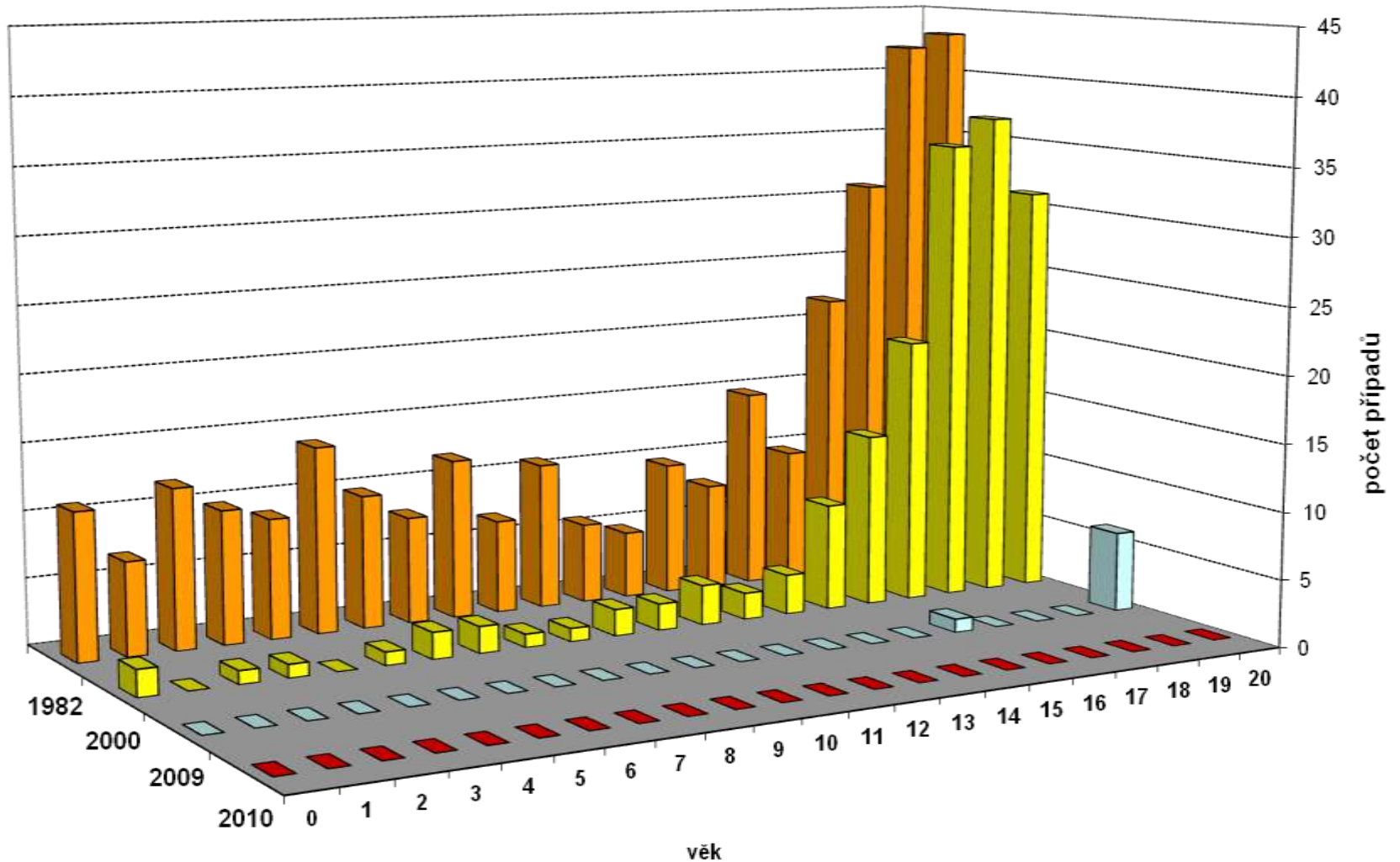
Acute HBV

Sum of cases, IDU cases, IDU (%)



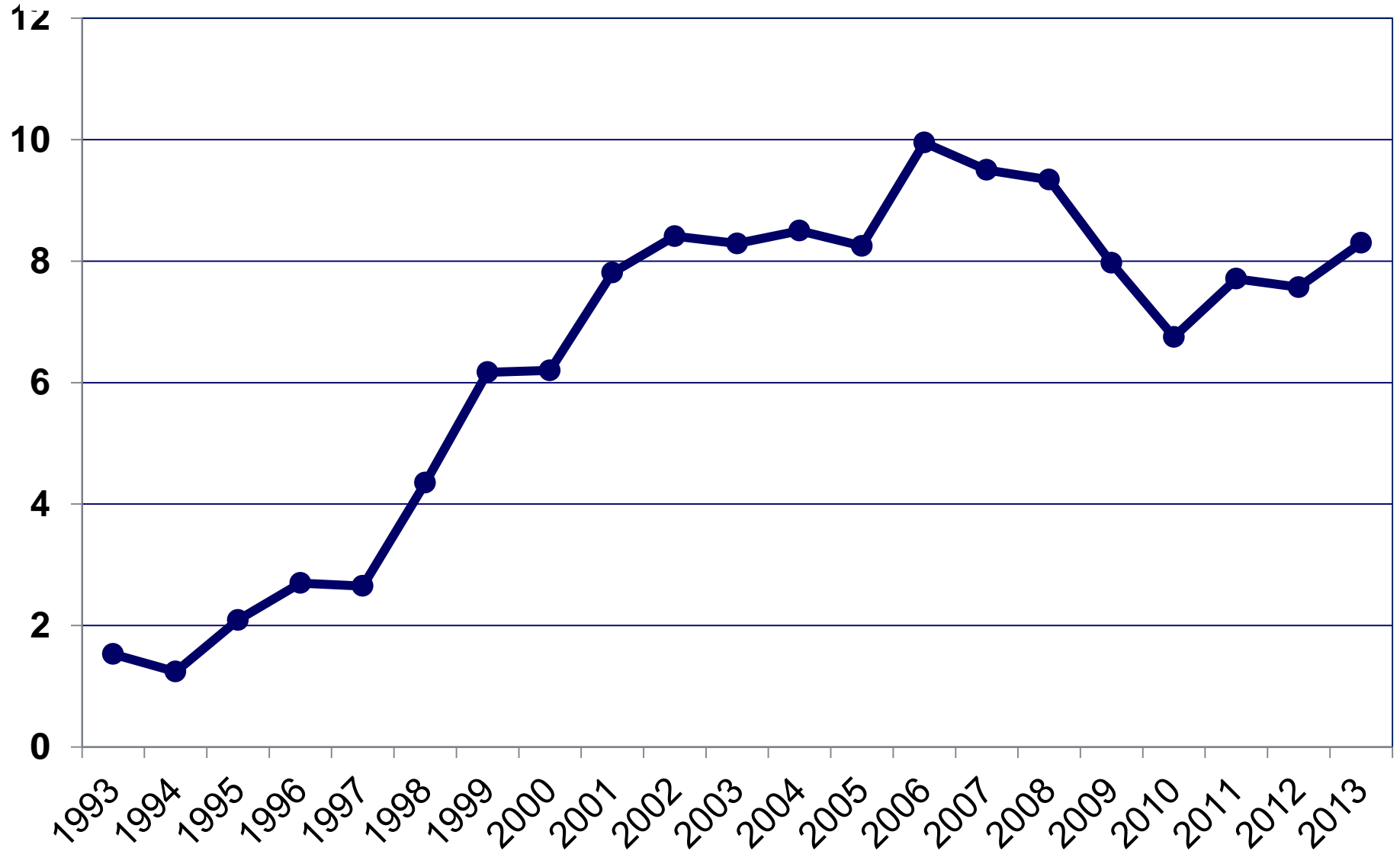
Acute HBV, number of cases

Age group 0 – 20 years



HCV, cases/100 000 inhabitants

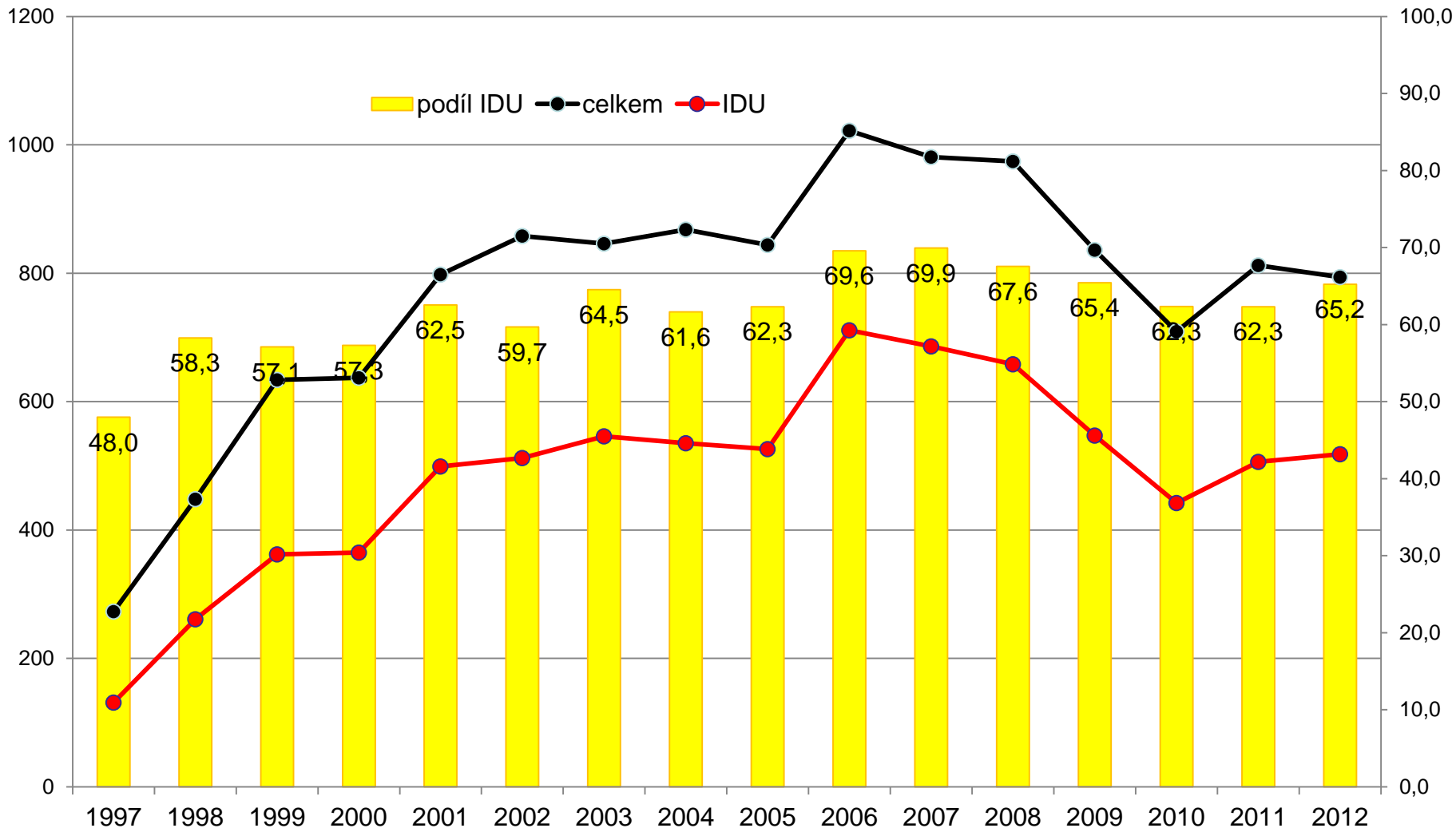
1993 - 2013



Hepatitis C, IDU (%)

1997 - 2012

%



Testing of blood/BC donors

HBV testing of blood/BC donors

HBV +	2010	2011	2012	2013
First time donors	37	28	25	22
No. of FT donors	57054	50142	52599	51767
Repeat donors	10	17	9	9
No. of R donors	238600	238895	269757	244142

HCV testing of blood/BC donors

HCV +	2010	2011	2012	2013
First time donors	80	106	94	114
No. of FT donors	57054	50142	52599	51767
Repeat donors	23	28	23	30
No. of R donors	238600	238895	269757	244142

HCV 2013: Comparison of Hospital TS and C-PF Donors

HCV +	H-TS	C-PF
First time donors HCV+	16	98
No. of FT donors	27300	21500
pos./10.000 donors	5,9	45,6
Repeat donors HCV+	6	24
No. of repeat donors / donations	181.800 / 574200	35.000 / 465.400
positive/100.000 donors / donations	3,3 / 1,0	68,6 / 5,2

Adverse reactions, adverse events I

Serious – mandatory to report to SUKL – SDCA

2013: 24 reports

Inputability 2 or 3: 12 cases

2013	RC	Plasma	Platelets
anaphylaxis	4	4	2
AB0 incompatibility	1	-	-
TACO	1	-	-

Adverse reactions, adverse events II

Serious + mild ... voluntary reported to Czech Society for Transfusion Medicine (annually)

Adverse reaction, adverse events, CSTM Report 2013

	PK	EBR	ERD	EP	TB/TBS	TBD	TA	TAD	P/PA	KRYO	KP	GPK	GA	JINÉ SPECIFIKUJTE	JINÉ	
počet podaných (sledovaných) přípravků	1006	201095	84033	79	1082	3547	919	20591	132943	29	701	172		2 873		449 070
febrilní nehemolytická (FNHTR)		131/2	37/0			1/0			15/0				3	3/0		190/2
hemolýza časná imunní ABO		1/0														1/0
hemolýza časná imunní non-ABO		1/0*														1/0
hemolýza časná neimunní			1/0						0/1							1/1
hemolýza pozdní imunní																---
alergie		55/4	24/0		1/0	3/0	5/0	19/0	150/3					7/1		264/8
anafylaxe		1/0					0/1	1/0	2/2					0/1		4/4
TRALI								1/0	1/0							2/0
potransfuzní purpura																---
potransfuzní imunizace Ery		33/0														33/0
potransfuzní imunizace leuko, trombo		1/0	2/0					6/0	1/0							10/0
potransfuzní GVHD																---
imunomodulace s komplikacemi																---
potransfuzní sepse																---
přenos infekce: specifikujte																---
oběhové přetížení		12/2	2/0					2/0	3/0							19/2
hypotermie		1/0	1/1													2/1
citrátová reakce																---
ionot. dysbalance (K ⁺ , NH ₄ ⁺ , PO ₄)																---
jiná:dušnost		3/0														3/0
jiná:		10/0	5/0						1/0					1/0		17/0
jiná:hypotenze		1/0														1/0
jiná:záňtlivá		2/0	1/0													3/0

*inkompatibilita v Le/b/

Uvádějte jen reakce se stupněm přisuzovatelnosti 2 a 3.

Zápis: lehká/težká

Conclusions

- **Fragmented transfusion service**
- **100% selfsufficiency**
 - **all blood products (RBC, P, Plt)**
 - **plasma derivates except of anti-D**
- **Support of EU with plasma (> 420 t L/annually)**
- **Safe blood therapy**
- **Future?**

Thank you for your attention

