Blood Service in Central Asian Region

Jumagulova A. (DIH, EPO, CDC/CAR);
Nigur J. (Jordan National Blood Center)
Mamirhanova A. (Kazakh Republican Blood Center)
Kutukeev T. (Kyrgyz Republican Blood Center)
Bohovadinov B. (Tajik Republican Blood Center)
Kalashnikova T. (DIH, EPO, CDC/CAR)
Musabaev E. (Ref. Lab .Uzbekistan)
Usmanov R. (Ref. Lab. Kyrgyztan)
Ongarbaev A. (Ref. Lab .Uzbekistan)
Kuchuk T.(Ref. Lab. Kyrgyztan)
Mustafaeva E. (Ref. Lab .Uzbekistan)
Favorov M. (DIH, EPO, CDC/CAR)

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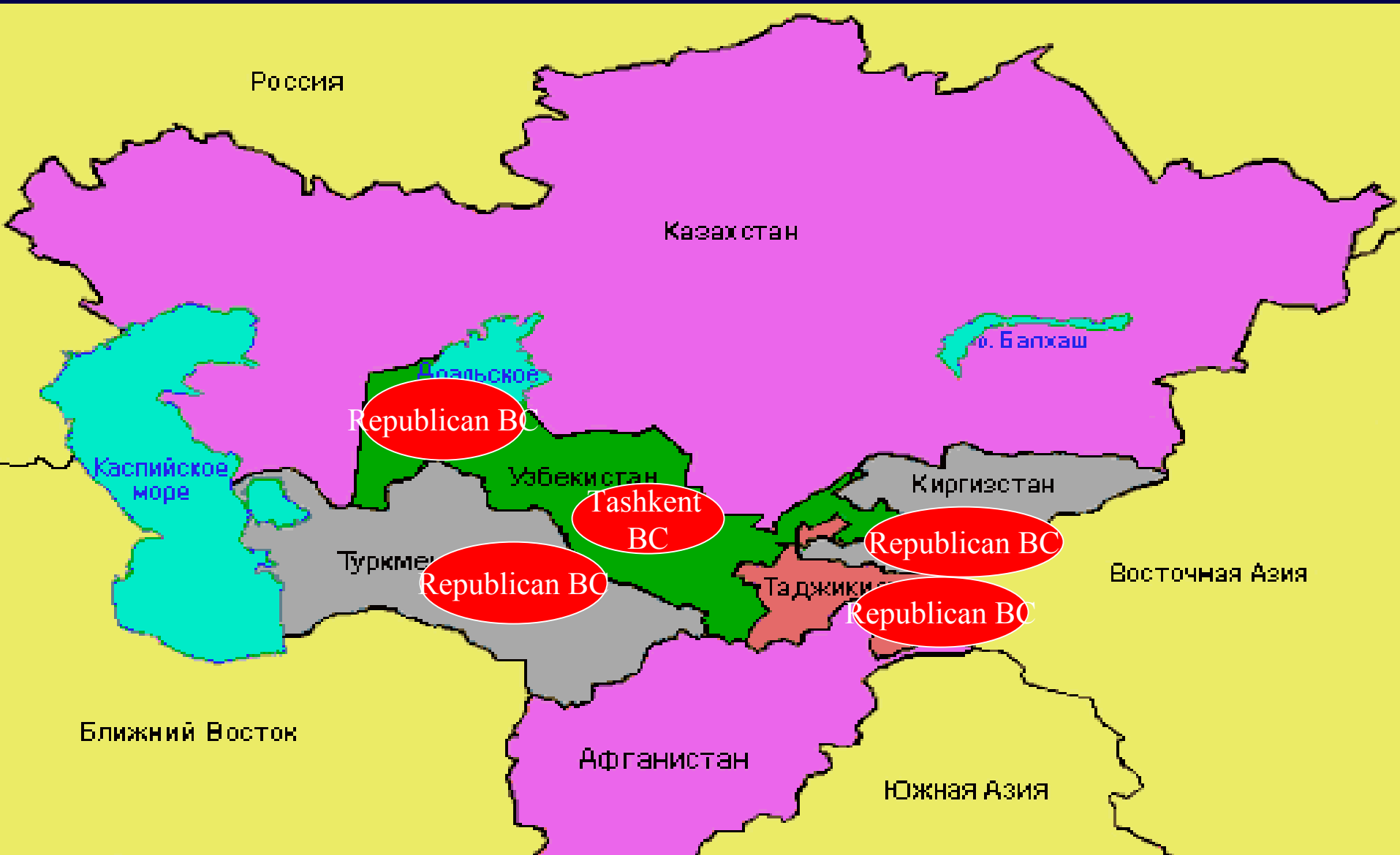
Pilot sites


Россия
Казахстан
оз. Балхаш
Аральское
Republican BC
Каспийское
море
Узбекистан
Tashkent
BC
Киргизстан
Republican BC
Туркме
Republican BC
Таджики
Republican BC
Восточная Азия
Ближний Восток
Афганистан
Южная Азия

Major project stages:

Stage I

Assessment of blood service status in CAR

Stage II

Provision of technical support:

- Delivery of laboratory equipment
- Setting up methodological centers (Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan)
- Training specialists at all levels:

  a) training courses for laboratory professionals

  b) training managerial staff in the principles of management

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Assessment of the status of blood services in Central Asia (CDC/CAR, ICBS) (I)

- Weaknesses of blood donor recruitment:
  - Paid blood donations
- Low capacity of laboratory service of blood banks
  - No comprehensive blood donor screening;
  - Visual interpretation of serological test results
- Insufficient Blood Centers facilities:
  - Application of reusable supplies
  - Incomplete set of equipment
- Nosocomial infections in blood service facilities

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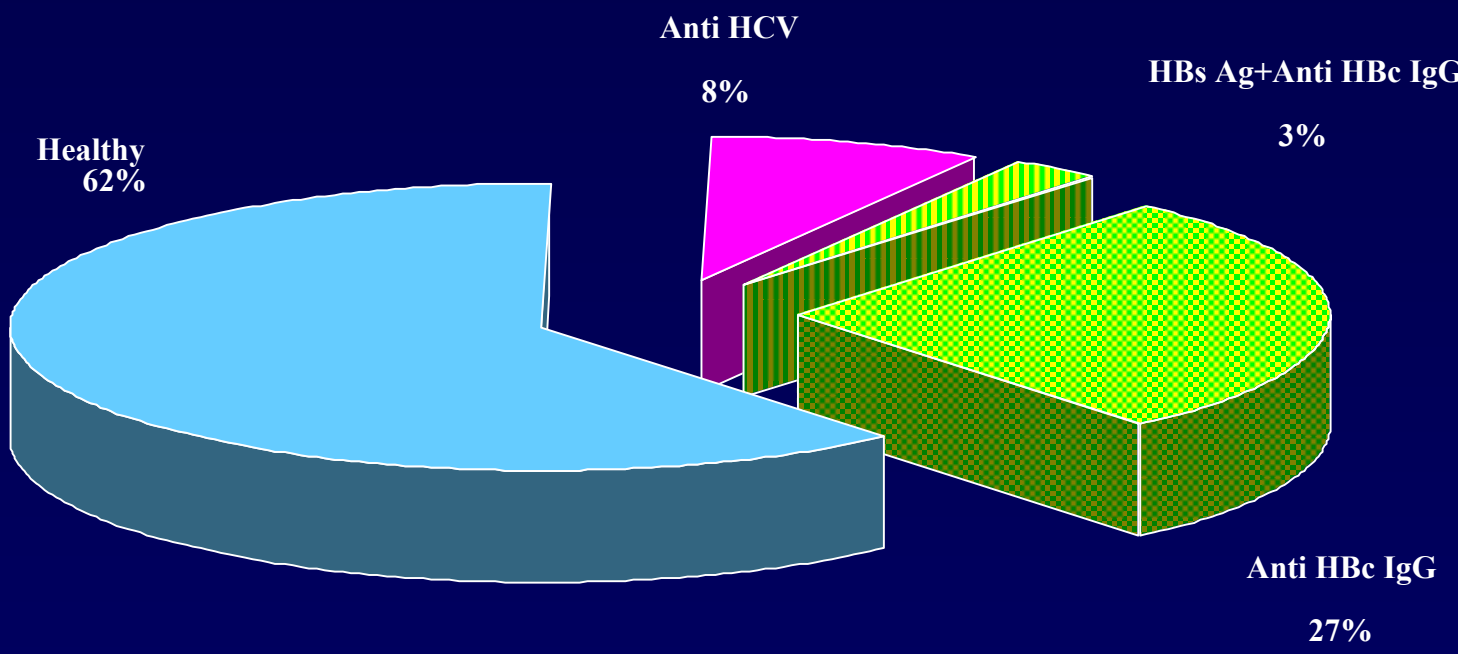
Prevalence of HCV infection among Blood Centers personnel, 1999 (n=168)



Statistically significant risk factors for HBV infection, 1999

Risk factors	(n)	Infected	Non-infected	p<
Exposure to blood	63	5 (8%)	58	0.01
No exposure to blood	105	0	104	
Traumas at working place	24	5 (21%)	19	0.01
No traumas	39	0	39	
Repeated use of gloves	15	5 (33%)	10	0.0001
No repeated use of gloves	63	0	63	

Statistically significant risk factors for HCV infection, 1999.

Risk factors	(n)	Infected	Non- infected	p<
Donors	77	12 (16%)	65	0.004
Not donors	91	2	89	
Plasma donors	46	12 (26%)	32	0.003
Blood donors	34	0	34	

Use of reusable bottles for blood collection

Analysis of anti-HCV prevalence among blood donors (CAR, 2003)

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Materials and Methods

- In February -August 2003 2500 donors of the Republican Blood Center and 499 pregnant women were screened for HCV markers in one of the Central Asia regions.
- Results of anti-HCV tests of blood serum samples collected from donors (EFA method) in BC laboratory were compared with the data of reference laboratory.
- Questionnaires included demographic data and possible risk factors for donors getting infected with VH.

Results of laboratory tests of donors for anti-HCV

Blood Center results	Results of reference laboratories (+)	Results of reference laboratories (-)	
(+)	**76**	**7**	**83**
(-)	**104**	**2313**	**2417**
	180	**2320**	**2500**

Sensitivity - 42%

Specificity – 99%

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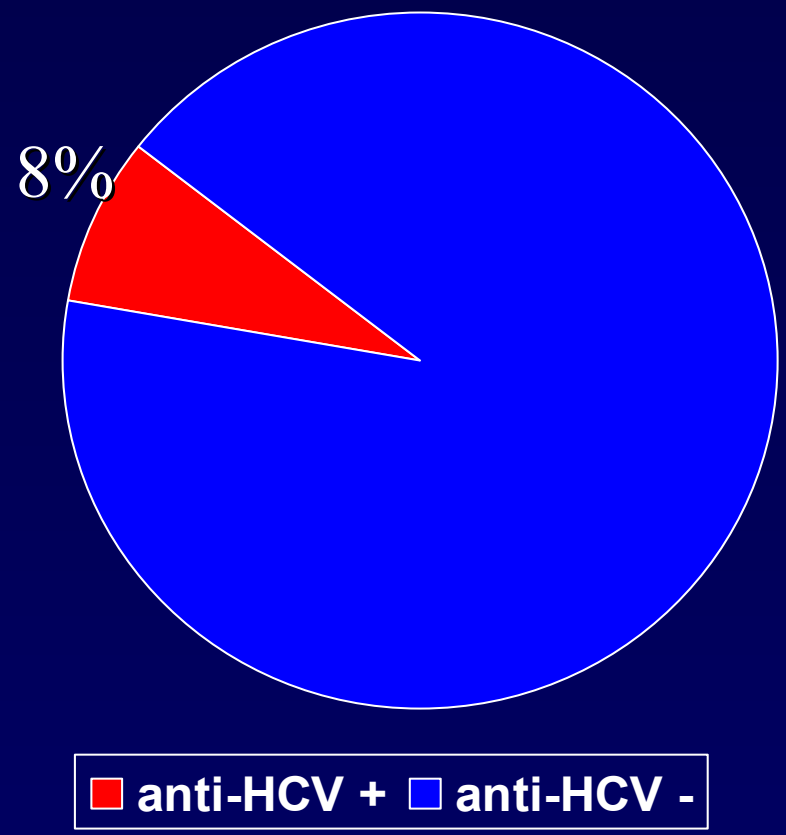
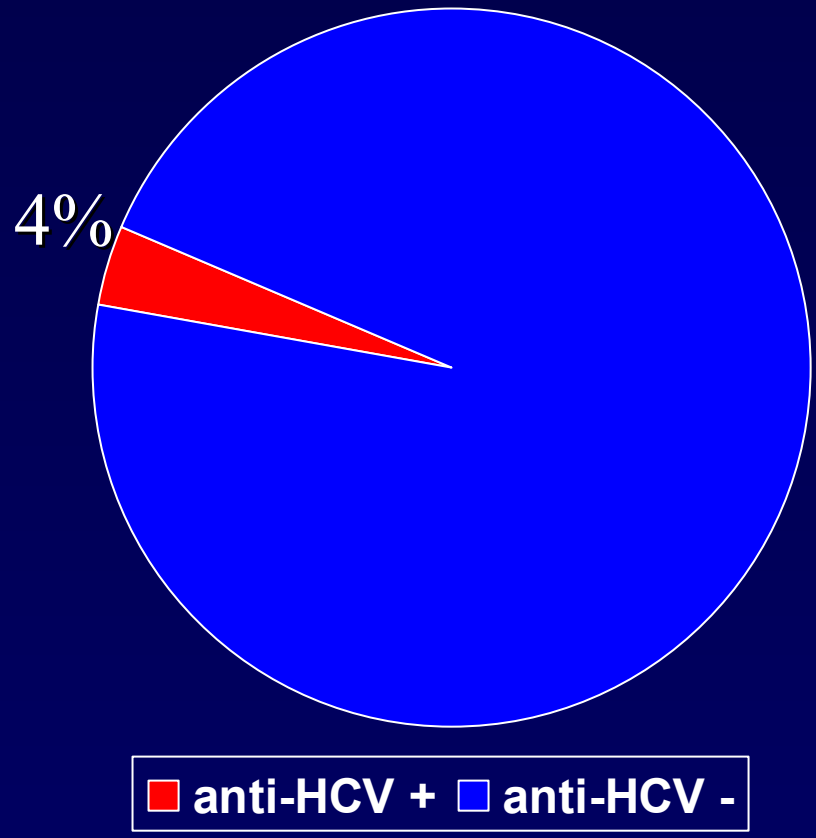
Anti-HCV prevalence

among blood donors n=2500

among pregnant women n=499





RR=1.93 95% CI=1.23-3.02 p<0.004)

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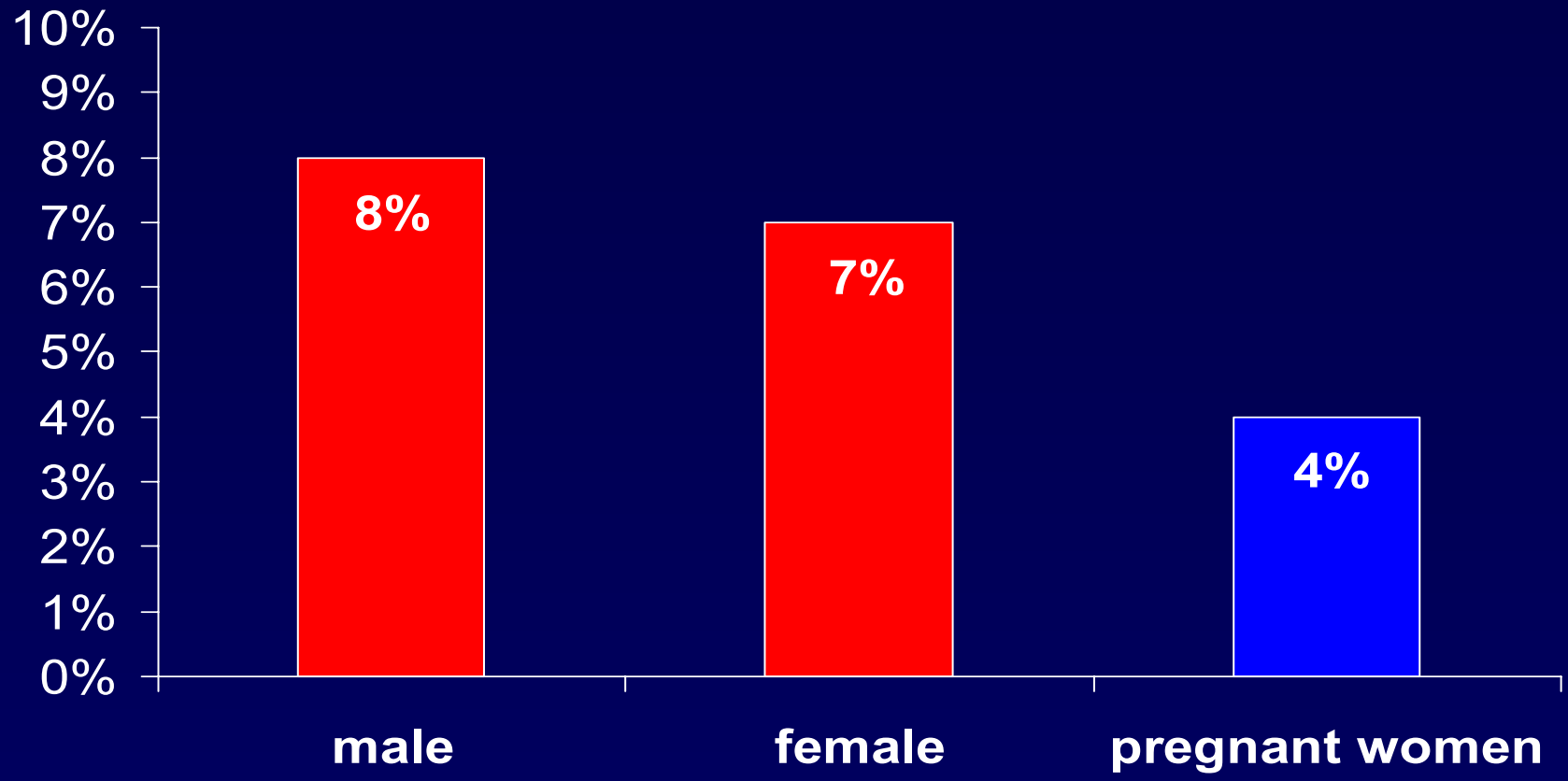
Anti-HCV prevalence among donors (n=2500) and pregnant women (n=499) by sex, RBC, 2003



$RR_{1,2}$=1.19 95% CI=0.87-1.63 p<0.3
$RR_{2,3}$=1.70 95% CI=1.02-2.82 p<0.05

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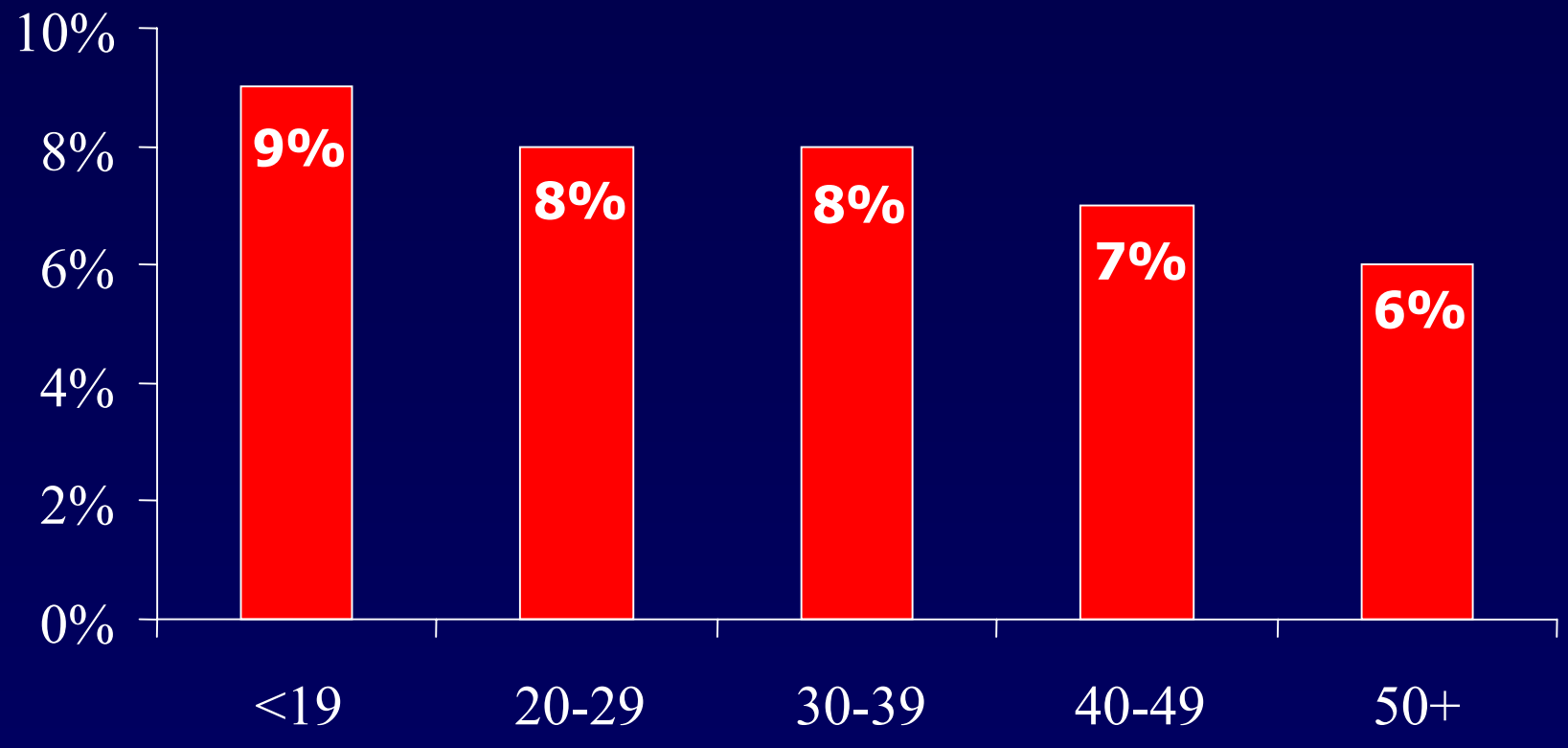
Anti-HCV prevalence among donors by age RBC, 2003

$RR_{1,5}$=1.50 95% CI=0.80-2.83 P<0.2



n=2500

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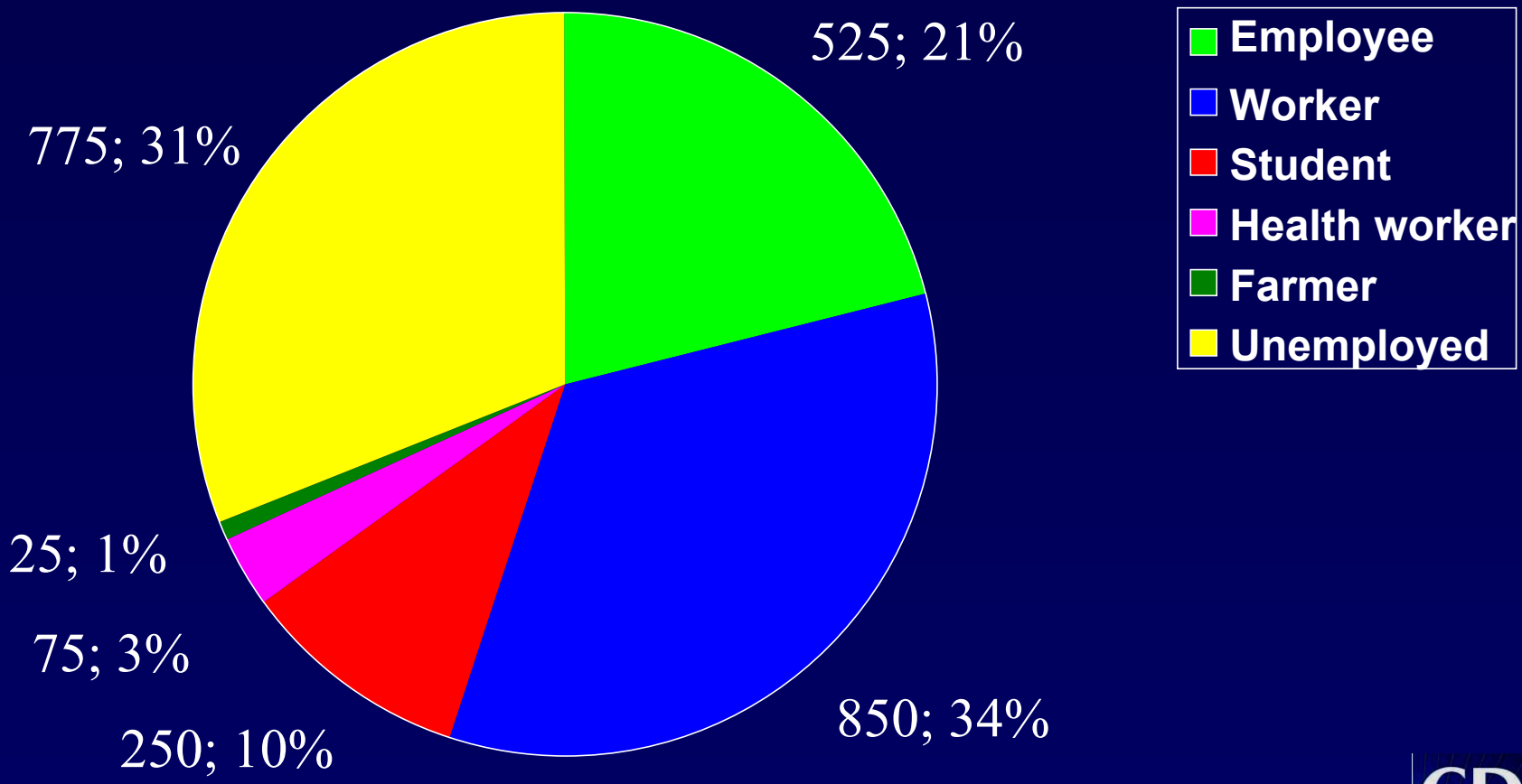
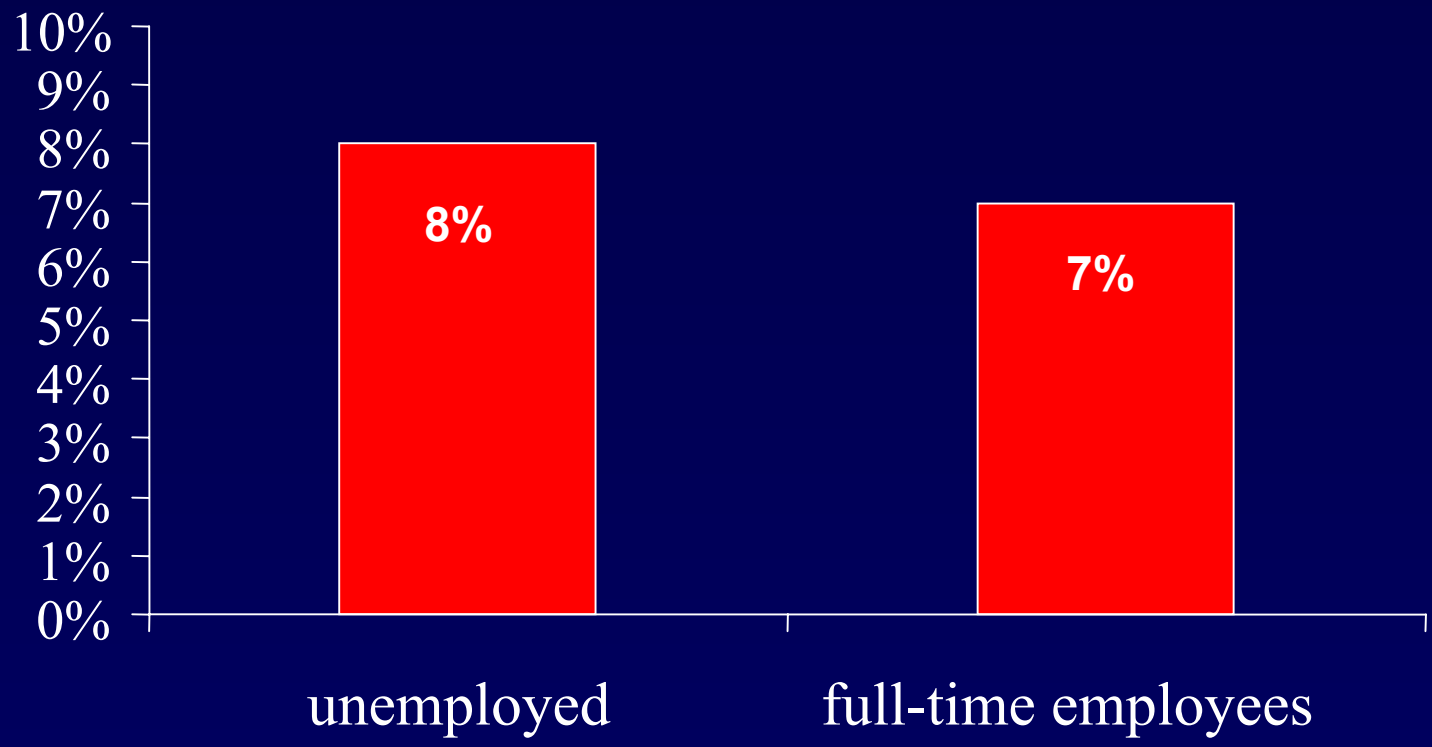
Distribution of donors by occupation, RBC, 2003



n=2500

Anti-HCV prevalence among unemployed and working donors, RBC, 2003



n=2500

RR=1.16 95% CI=0.87-1.54

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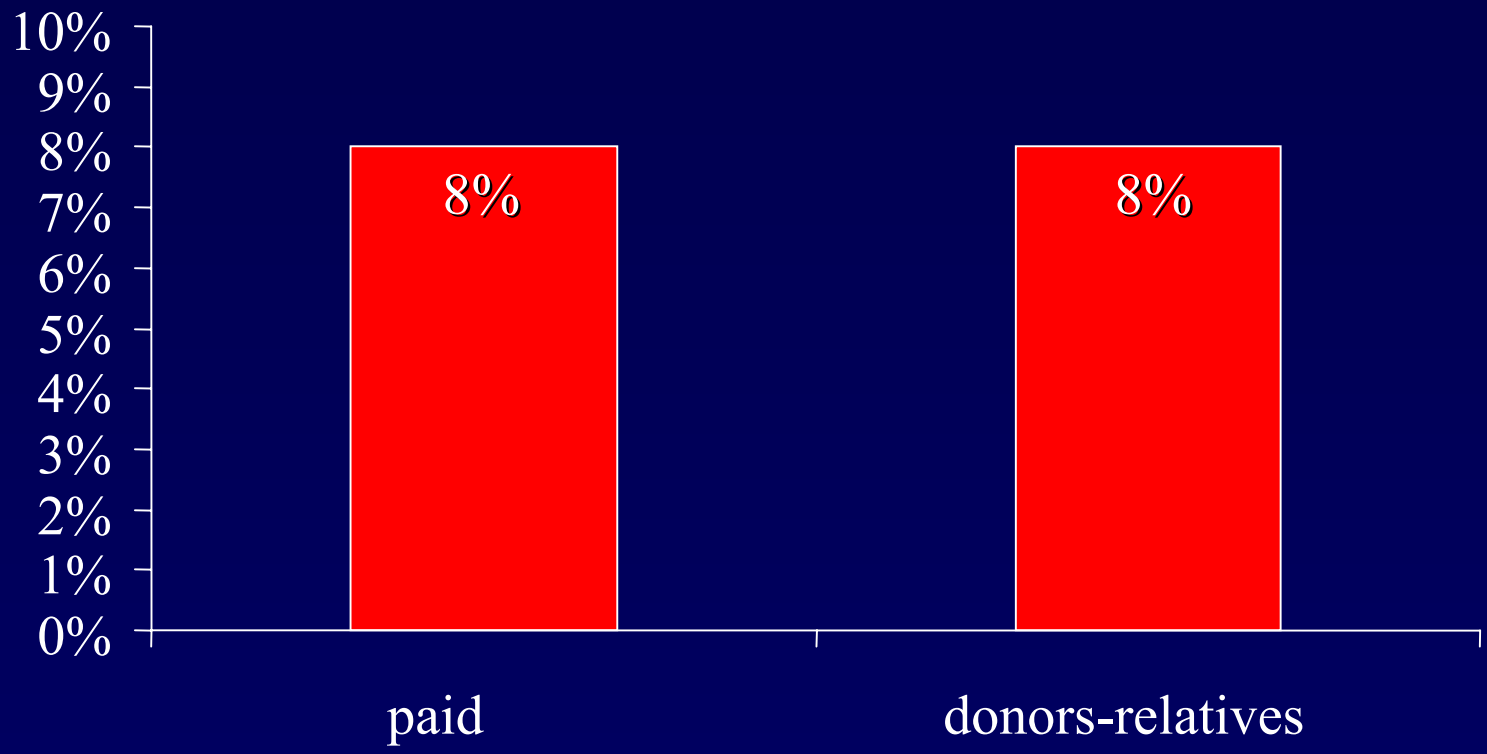
Anti-HCV prevalence by donation type, RBC, 2003



n=2500

RR=1.19 95% CI=0.87-1.63

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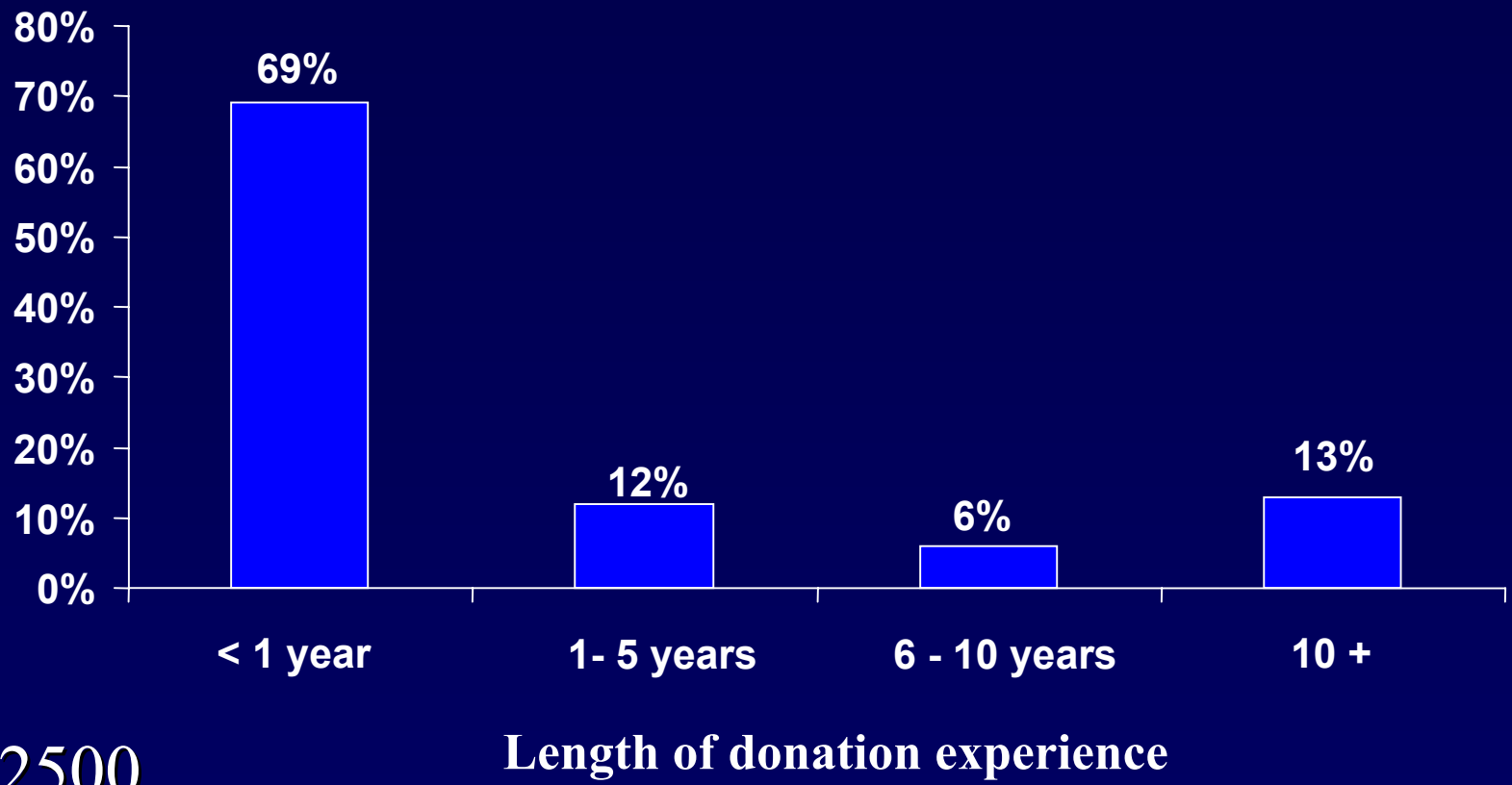
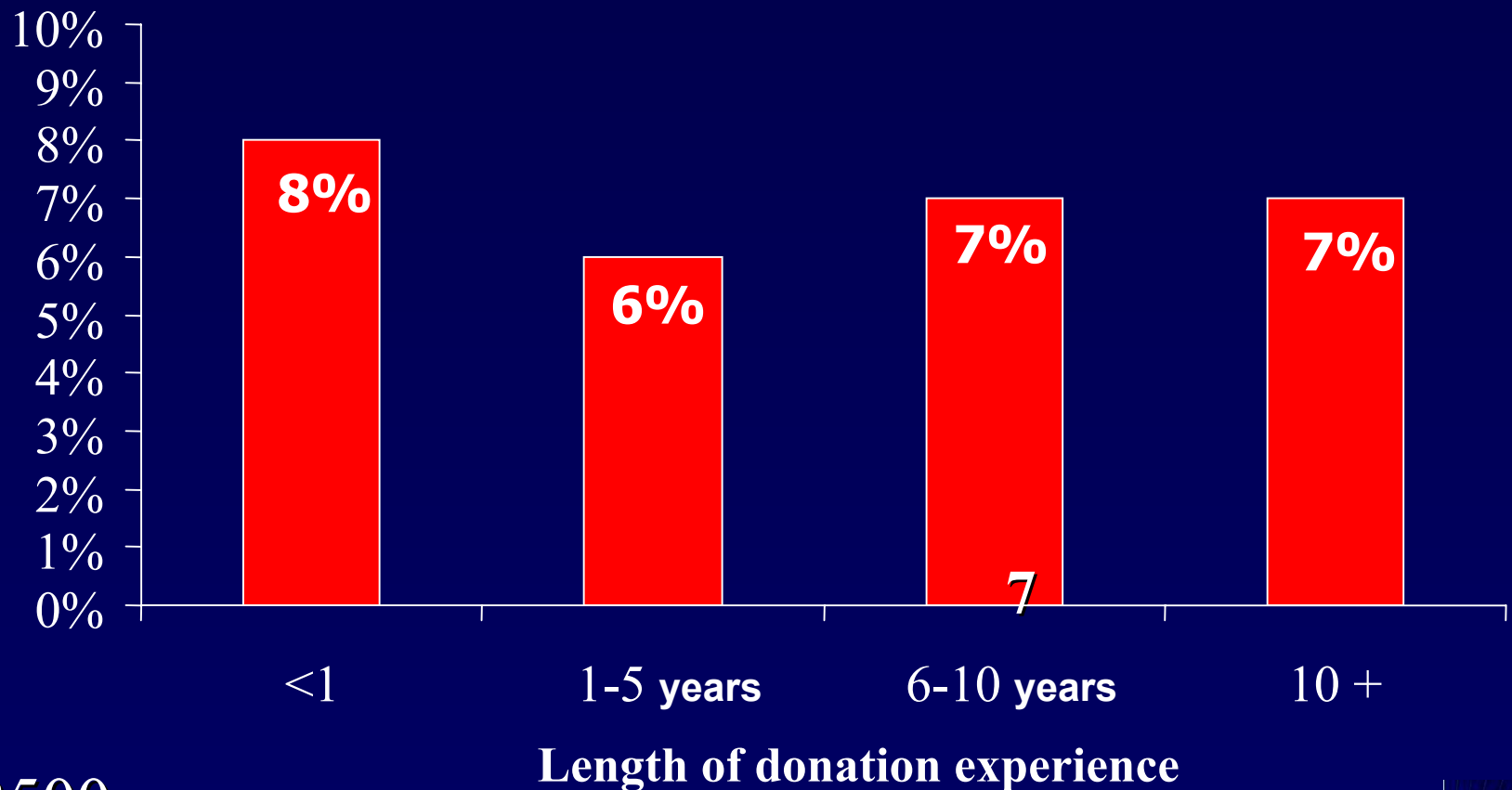
Distribution of respondents by the length of donation experience, RBC 2003



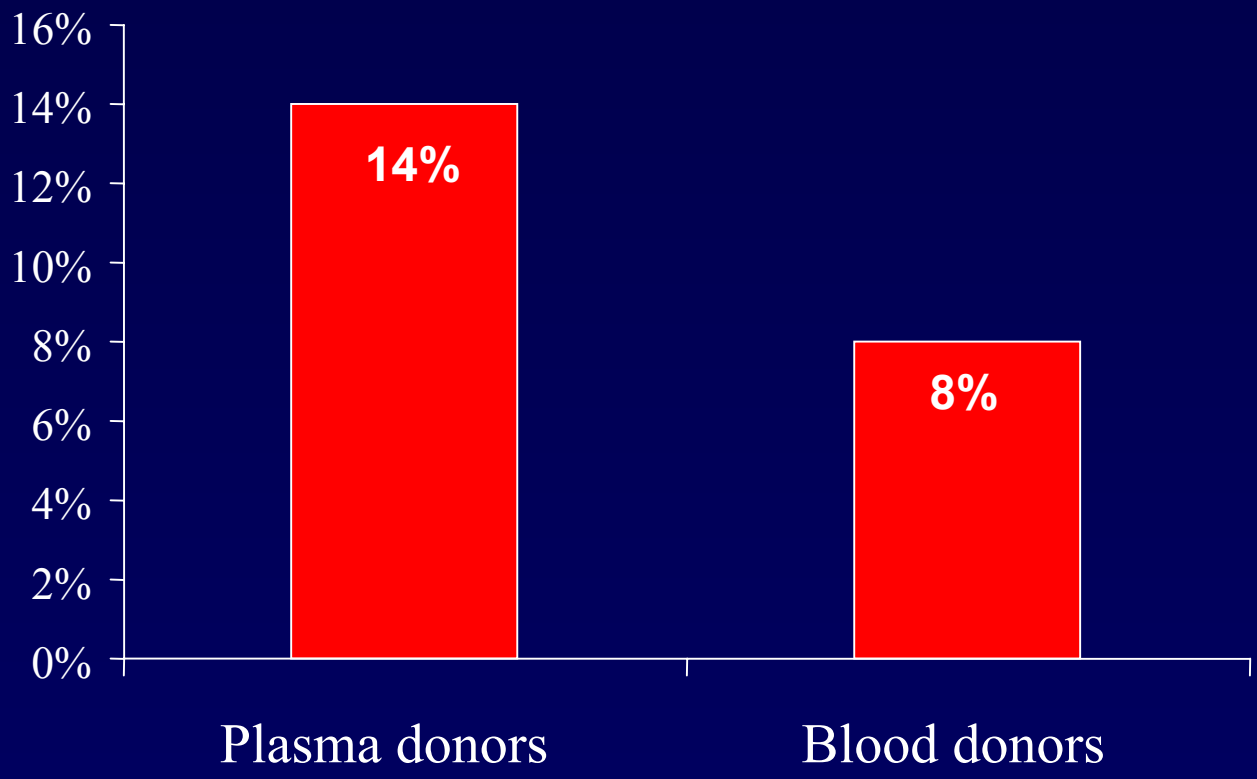
n=2500

Anti-HCV prevalence among respondents by the length of donation experience, RBC 2003



n=2500

Anti-HCV prevalence among plasma and blood donors, RBC, 2003



RR=2.53 95% CI=1.45-4.41

n=2500

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Conclusions (I)

- High risk of nosocomial transmission of VHs within Blood Center:

Out of 168 Blood Center staff members:

- 5 (3 %) – HBV
- 14 (8 %) – HCV

Risk factors with special reference to acquiring VHB :

- Exposure to blood and blood products
- Traumas while working with blood
- Repeated use of gloves

Risk factors with special reference to acquiringVHC:

-Plasma donation (collection of blood into reusable bottles).

Conclusions (II)

- High prevalence rate of anti-HCV (8%) among donors.
- Poor diagnosis quality in the laboratories of Blood Centers (sensitivity 42%).

Within the project framework:

- ✓ A training module has been devised.
- ✓ Working focus groups have been formed;
- ✓ A Guide on the strategy of safe blood use has been developed and published.
- ✓ Managers of Blood Centers made a study tour to Jordan National Blood Center.

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Recommendations

- Introduce the system of quality assurance and quality control to the laboratories of blood service with the follow-up program monitoring;
- Train Blood Center specialists in major principles of blood safety measures;
- Reduce risk of nosocomial infection in Blood Centers through development and implementation of effective anti-epidemic interventions;
- Blood donations are not recommended for the Blood Center staff.

CDC/CAR Partners

- American Agency for International Development (USAID)
- International Consortium on Blood Safety (ICBS)
- WHO

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Blood transfusion is not the only way in which infections are transmitted, but it is the only easily preventable way!

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